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Arms and Arms Control



ARMS AND ARMS CONTROL

A Symposium edited by

ERNEST W. LEFEVER

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BOOKS THAT MATTER

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Prefatory Note

The question of arms control and disarmament has attracted widespread attention in recent years. It has also become a matter of intense and continued study within the academic community. Perhaps for this reason, much of the available literature on the subject is of a specialized and technical nature.

As the subject is properly one of public interest, it appeared that a balanced section of readings from the increasing volume of literature would be of service both to laymen and to experts in other fields who wished to inform themselves about the nature and scope of the many problems involved. The concept of such a reader, and the task of editing it, were those of Mr. Ernest W. Lefever, a specialist in arms control and disarmament who served as a Research Associate with the Washington Center of Foreign Policy Research during the academic year of 1960-61.

The Washington Center of Foreign Policy Research is affiliated with the School of Advanced International Studies of The Johns Hopkins University. The purpose of the Center is to enable academicians and practitioners to conduct research, individually and as a group, on problems of international politics that are relevant to both the development of theoretical knowledge and the conduct of United States foreign policy.

ARNOLD WOLFERS, Director
The Washington Center of
Foreign Policy Research

Washington, D.C.
November, 1961

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The New Arms-Control Consensus

THE current upsurge of interest in arms control and disarmament in the United States is a remarkable phenomenon. Arms control has become a respectable, even fashionable, problem for discussion and study in the university and the research community. The growing stream of articles, pamphlets, and books, both scholarly and popular, threatens to overwhelm the concerned citizen whose desire to understand the complexities of world politics is sometimes pre-empted by his eagerness to do something now to prevent nuclear war. This new concern on the part of citizen and scholar coincides with the most serious and comprehensive disarmament effort the United States Government has yet undertaken.

It is ironic that this new interest in arms control should be gaining momentum at a seemingly inauspicious time. It follows a decade and a half of fruitless negotiations to control or eliminate weapons by international agreement, and it coincides with the collapse of an intense and protracted effort to achieve a limited measure to mitigate danger—an agreement for an inspected ban on nuclear-weapons tests. And it comes at a time of increased intransigence and hostility in Soviet foreign policy, reflected in Premier Khrushchev's offensive to neutralize or destroy the frail international peacekeeping machinery that now exists.

But this widespread concern with arms control is not simply

an anguished cry of "peace, peace, when there is no peace!" It is a fresh recognition, partly born of anguish to be sure, that something more practicable than drastic disarmament can and should be undertaken now to reduce the risk of general war. This concern to reduce the likelihood of a nuclear holocaust, augmented by a growing interest in efforts to make war less destructive should we fail to prevent it, is perhaps the central motive behind the present disarmament movement.

Three major approaches to the problem of making nuclear war less likely or less destructive, or both, are found in the current literature. There are two minority views, which cluster around incompatible poles. The third, a middle position, represents an emerging consensus on what should be done to enhance international security in the nuclear-missile age.

At one end of the opinion spectrum are those persons who are convinced that the destructive power of nuclear weapons has made war politically obsolete and morally indefensible. No national interest or purpose, they hold, can justify the use of nuclear weapons. Some advocates of this view also oppose limited war fought with conventional weapons because such a conflict might spiral into a nuclear holocaust. If war is no longer a rational or morally acceptable instrument of national policy, they argue, the weapons of mass destruction should be eliminated by mutual agreement if possible, and by unilateral action if necessary.

At the opposite end of the spectrum are those people who focus their attention almost exclusively on the military threat of Communism and on military means to deal with this threat. Power is what our adversaries understand, they say. Power is what deters them from attack, and the more military power we have the more effectively we can frustrate their expansionist ambitions. To restrict our military strength unilaterally or reciprocally is to weaken ourselves dangerously. Such a course would permit our adversary the luxury of using with impunity his weapons of subversion and terror.

These two polar approaches have the appeal of simplicity and internal consistency. But they obscure the depth and complexity of the challenge we face. Each in its own way is too preoccupied with the military aspects of the struggle. The Bomb banners, hypnotized by the Bomb, tend to overlook the dangers of aggression and tyranny. The Bomb builders, in their preoccupation with aggression and tyranny, tend to overlook the political and moral dangers of nuclear war. Since the American people sense the dangers of both war and tyranny, neither of these two simple approaches is likely to attract more than minority support.

Between these two extreme views lies an emerging consensus among students of national security and arms control. Participants in this consensus are deeply concerned about the threat of war and the dangers of an externally imposed tyranny. They attempt to take into account all facets of the struggle we call the Cold War. Persons who share this perspective tend to prefer the term *arms control* to *disarmament*, because the latter suggests only one way of lessening the risk of war—drastic reduction in the level of arms—and this is the very way that appears least feasible in the foreseeable future. Even if such a cut were politically possible it would not necessarily make war less likely, although it might make it less destructive.

The new consensus focuses on the concept of military stability and the contribution of stability to national security and international peace. In a stable military situation, by definition, there is an absence of general war and the likelihood of such a war is small. A policy directed toward enhancing stability seeks to create an international military environment of mutual deterrence in which both the Soviet Union and the United States would have the capacity to deter the other from initiating a strategic attack. Accordingly, both we and the Soviets should attempt to develop and maintain sufficient retaliatory capacity to make certain that the punishment for a first strike would be unacceptable to the aggressor.

The new strategic and arms-control consensus is concerned not only with premeditated attack, but also with the danger of unintended nuclear war. Students of this approach have grappled with proposals to reduce the probability of a general war by accident (human error or technical failure), by the "escalation" of a local conflict, by the catalytic action of a smaller power, or by the miscalculation of one or both sides. Implicit in this concern with efforts to prevent inadvertent war is the belief that a nuclear catastrophe is more likely to result from escalation or miscalculation than from deliberate design.

Underlying this approach is the assumption that general nuclear war would be a human catastrophe of monstrous proportions and that both sides recognize it would endanger their vital interests and possibly jeopardize their very existence. The Soviet Union and the United States clearly want to avoid nuclear war. But neither power wants to avoid war at the price of surrendering its national purpose or its right to pursue the objectives that flow from this purpose. As the global struggle develops it may be necessary for one (or more) of the great powers to modify its purposes or redefine its international objectives in order to avoid a nuclear showdown.

Military stability is not an end in itself but the foundation upon which efforts to reduce the level of arms must be built. The immediate objective is to achieve stability, even if it must be based upon a balance of terror. The long-range objective is to maintain stability at decreasing levels of destructive capacity. A viable arms-control measure should maintain, restore, or enhance strategic military stability. If it does not pass this first and crucial test it should be rejected. A lopsided control agreement conferring a significant advantage on one party might tempt that party to exploit the advantage by threat, blackmail, or outright attack. If a proposal passes this first test, it is then appropriate to ask whether it will reduce destruction should war occur. A measure that passes both tests is, of course, preferable to one that passes only the first test.

The new arms-control consensus recognizes three major paths to greater security. *First*, significant measures can be taken unilaterally by the United States or the Soviet Union to develop a less menacing military posture and thus reduce the danger of war. Much can also be done by either side to erect safeguards against war by accident or escalation. Hopefully such actions will elicit similar measures by the other side. If the Soviet Union develops a less menacing stance, we can then afford to do the same. If we emphasize defensive and second-strike weapons, the Soviets can safely follow suit. There are numerous possibilities in unilateral action that, if acted upon, would make a safer world for ourselves and our adversaries as well as for our allies and the unaligned nations.

The *second* path is closely related to the first—the area of tacit agreements between the major nuclear powers. By self-restraint, one side can sometimes induce restraint on the part of its adversary. This mutual restraint can lead to tacit understandings that are in many ways as effective as formal agreements. The reciprocal moratorium on nuclear tests, which was in effect for almost three years, is an illustration of a tacit agreement. This agreement was broken by the resumption of Soviet atmospheric tests in September, 1961.

The *third* path is the traditional disarmament approach—the formal negotiated agreement. Explicit agreements appeal to many people because they provide for specific and tangible safeguards. But it is precisely in this area that no progress has been made since the end of World War II. Although the prospects for successful arms negotiations appear dim, the participants in the new consensus insist on exploring every possibility for a viable treaty, with adequate safeguards and controls, among the nuclear powers. Their interest in this approach is demonstrated by the considerable volume of research devoted to various official and unofficial proposals, focusing especially on the problem of inspection and control.

Whether a government seeks to mitigate the danger of war

by unilateral measures, by tacit agreements, or by negotiated treaties, there is always an element of collaboration with the adversary involved. This collaboration, which enhances mutual security through mutual restraint, is the essence of arms control.

The emerging consensus briefly summarized here is, I believe, the prevailing approach today among independent scholars and researchers concerned with national security and arms control. It has been gaining increasing acceptance within the U.S. Government. In a major policy speech on February 18, 1960, the then Secretary of State Christian A. Herter said we must urgently attempt "to create a more stable military environment, which will curtail the risk of war and permit reductions in national armed forces and armaments." President Kennedy is a spokesman for the new approach (see selection 6), and under his leadership it has become the official view of the Government.

Insisting on the priority of military stability, this approach appears to be more acceptable to the American people generally than either the views of those who call for drastic arms cuts with little regard for the requirements of mutual deterrence or of those who seek to solve international problems almost exclusively by military might. The representative cross-section of leaders who participated in the American Assembly on Arms Control, May 4-7, 1961, certainly reflected the new consensus (see selection 10). The same can be said for the leaders of Western Europe who took part in the European-American Assembly on Arms Control, July 6-9, 1961 (see selection 11).

This symposium is designed to introduce both the layman and the specialist concerned with some facet of the security problem with the current "state of the art" by providing a balanced sample of the best recent writing on arms control. Most of the contributors to this volume participate in the current consensus and several of them have helped to create it. To say that the majority of these writers share the same general approach to the problem is not to say there are no significant differences

among them. There are, and it is precisely this diversity within one broad approach to a new, complex, and uncharted field that stimulates further reflection and research. Since several of these essays fall outside of the consensus, the collection represents a wide spectrum.

Most of the selections were first published in the past two years, and all but four were written by Americans. This is not surprising. Alastair Buchan, Director of the Institute for Strategic Studies in London, said in 1961 that the volume and "quality of intellectual effort being devoted to [arms control and disarmament] in the United States far surpasses anything that is being done in Russia, Europe, and the uncommitted countries."

Many of the essays are printed in full. A number of them have been shortened, with the kind permission of the authors and publishers, to emphasize their distinctive contributions and to enhance readability. It should be clear that each selection is but a sample of the author's thinking on the subject. The editor hopes it is an honest and representative sample. No excerpt should be regarded as a substitute for the original book or article. If this collection stimulates the reader to turn to longer and more comprehensive treatises, it will have served its purpose well.

Each selection is preceded by a brief introduction indicating the author's perspective or summarizing his conclusions. In many cases, subheads have been added to the original essay and footnotes have been eliminated. An annotated bibliography of books, pamphlets, and periodicals on arms and arms control, compiled by the editor, is included as the final selection in the book with the hope that it will add to the value of the book as an introduction and guide to a rapidly growing body of thought.

Perhaps this is the place to say a word about several basic books that contribute to and reflect the current arms control consensus. Six books come to mind, all of which were published in 1961:

1. BULL, HEDLEY. *The Control of the Arms Race*. Frederick A. Praeger, 229 pages.
2. SCHELLING, THOMAS C. and HALPERIN, MORTON H. *Strategy and Arms Control*. Twentieth Century Fund, 148 pages.
3. BRENNAN, DONALD G. (ed.). *Arms Control, Disarmament and National Security*. George Braziller, 475 pages.
4. HENKIN, LOUIS (ed.). *Arms Control: Issues for the Public*, Prentice-Hall, 207 pages.
5. FRISCH, DAVID H. (ed.). *Arms Reduction: Program and Issues*, Twentieth Century Fund, 162 pages.
6. HADLEY, ARTHUR T. *The Nation's Safety and Arms Control*, The Viking Press, 160 pages.

Mr. Bull's book, written for the Institute for Strategic Studies in London, is the most comprehensive general work available on arms control in the nuclear-missile age. The Schelling-Halperin volume develops the stability-through-deterrence thesis of which Schelling was the chief architect. It is written in persuasive and nontechnical language. The books edited by Brennan, Henkin, and Frisch, respectively, are the products of carefully planned symposia. Although each of the forty-odd contributors to these three collections speaks only for himself, most of them do represent the current consensus. As a popular guide to certain military aspects of the new arms-control approach, Mr. Hadley's book provides a valuable introduction.

My original interest in editing this collection was stimulated by a survey of recent and current arms-control research I made in 1960 as a consultant to the International Affairs Program of the Ford Foundation. This interest found further expression during my year (1960-61), at the Washington Center of Foreign Policy Research, when I also served as a consultant to the United States Disarmament Administration.

I owe a special debt of gratitude to Professor Arnold Wolfers, Director of the Washington Center of Foreign Policy Research, for his encouragement and counsel in this project. To William

Burden, Jr., a research associate and colleague at the Washington Center, I am deeply indebted for his most helpful advice and assistance in selecting and editing these readings. Credit for the task of preparing the manuscript and securing permissions goes to Mrs. James Klonoski.

I wish to acknowledge my appreciation to the authors and publishers who gave me permission to use their essays, the quality of which will largely determine the value of this book.

ERNEST W. LEFEVER

Washington, D.C.
November, 1961

1. Arms Control and Other Approaches to Stability

By THE WASHINGTON CENTER OF FOREIGN POLICY RESEARCH

In the fall of 1959, the Washington Center of Foreign Policy Research submitted to the Senate Foreign Relations Committee a report on the anticipated developments in military technology during the 1960's, and the implications of these developments for U.S. military strategy. This essay, which deals with arms control and other measures for enhancing military stability, is drawn from the larger report. The authors emphasize the limits and possibilities of these approaches to stability—unilateral measures by the United States, reciprocal action with other governments desiring to move in the same direction, and international arms-control agreements by negotiation.

This brief essay was one of the first comprehensive statements of the new arms-control consensus.

Report No. 8, Arnold Wolfers, Paul H. Nitze, and James E. King, Jr., *Developments in Military Technology and Their Impact on United States Strategic and Foreign Policy*. Prepared by the Washington Center of Foreign Policy Research for the Committee on Foreign Relations, U.S. Senate, December, 1959, pp. 91-97.

LET us suppose for the moment that the United States has decided to give high priority to lessening the risk of total war by purposefully striving for a reduction in nuclear instability in the decade ahead. How might this be accomplished, at what price, and what might be the logical corollaries of such action?

Several variant courses of action are conceivable. . . . The United States, for example, could build and deploy retaliatory weapons systems of such security and mobility as to reduce the present Soviet temptation to strike first. Multiple attack-warning systems, capable of verifying each other's signals, could reduce the dangers of war by accident or miscalculation. This nation could modify its policies to reduce their dependence on threats of total war or on continued nuclear instability. We should be able to attain a measurable increase in nuclear stability by our own actions, quite apart from what the Soviet Union does, or does not, agree to do. Furthermore, our actions could be so designed that they will induce concurrent actions directed toward nuclear stability by the Soviet Union and other countries. The achievement and maintenance of such stability could be made a prime objective of our negotiations looking toward the international regulation and control of armaments.

The purpose unifying all of these actions would be the attainment and continuance of nuclear stability. A most important

corollary, however, would be that we and our allies would have to find and develop means other than the threat of strategic nuclear retaliation to support our foreign policies and to meet many of our security requirements. It is probable that this would take very great efforts and require substantial sacrifices. A decision to seek nuclear stability would imply a willingness to make such efforts and to endure such sacrifices.

The remaining portions of this essay will examine possible means of lessening the risk of total war in greater detail.

Unilateral U.S. Actions

It has been previously suggested that a principal source of instability is the advantage intercontinental missiles give to the side that strikes the first blow, particularly when its opponent's strategic power is centered in a force of manned aircraft. There is now, however, wide agreement that, if our resources were directed to the development and deployment of weapons systems specifically designed to defy location or to otherwise survive a surprise attack, much could be done to reduce this present source of instability. Mobility or hardening, concealment, multiformity of retaliatory systems, and sheer numbers of dispersed and variegated weapons could make it extremely difficult for the Soviet Union to have a high degree of confidence that it could, in the first blow of a total war, knock out a high percentage of its adversary's retaliatory power. The obstacles to lessening the chance of total war in this respect do not appear to be primarily technological. They rise instead from considerations of cost, the leadtime requisite to development of complex modern weapons systems, and the competing demands of those who advocate alternate weapons designed to give the United States a capability of striking the first blow itself, should this be necessary to fulfill our foreign policy commitments. Perhaps the most difficult of these obstacles is time itself. To achieve nuclear stability now [1959] would require the weapons systems

presently programmed for appearance in 1963-65. By 1965, we might well need those systems planned for 1970. A substantial degree of stability can in the interim be achieved by gap-fillers and protective expedients, systems imperfect but in being or achievable by the early 1960's.

The more secure these retaliatory systems are from destruction by an initial counterforce blow, the less this nation would need to rely upon a capacity for "hair-trigger" response. If we had a substantial number of Polaris submarines concealed in the ocean depths, hardened or mobile Minuteman solid-fuel ICBM's in position, and long-endurance aircraft armed with ballistic missiles dispersed in the sky above, we could then afford to verify and evaluate early and perhaps mistaken signals of enemy attack before pressing any launching buttons. If the early warnings were not confirmed by the arrival of enemy missiles, there would even be time for communication with the presumed aggressor before launching our retaliatory strike. We would not have to decide this question in minutes or under the intolerable pressure of knowing that, if the missiles were actually on their way, our retaliation must be launched immediately or not at all. We could thereby reduce the danger that unilateral action, taken in haste and quite possibly on the basis of false or misleading information, would bring about a war that could have been avoided.

The United States could also do much to reduce those instabilities arising from peacetime military strategies and policy positions. If it accepted the corollaries of a decision to opt for nuclear stability and had determined to attain its foreign policy objectives by means other than threats of nuclear war, it would then become inconsistent to rattle our strategic weaponry, or to declare that the response to localized Communist aggressions could not be limited to the area of the aggression or to the weapons initially employed. It would also be inconsistent, and be in fact self-defeating, to continue the deployment of intermediate-range ballistic missiles on soft, unconcealed, immobile

and undispersed European sites within easy range of Soviet IRBM's. Such weapons, so deployed, are useful only in a first strike: It is extremely unlikely that they would be available to us for a retaliatory blow. They may have limited utility in the deterrence of non-nuclear Soviet aggression, given the absence of more appropriate military capabilities for this purpose, but they add to the risks of nuclear instability.

In sum, much could be done unilaterally to move toward strategic nuclear stability. But many serious problems would remain. The race for technological improvement would continue unabated, with its heavy costs and uncertainties. The spread of strategic nuclear systems to other countries would continue with all the possibilities for as yet unforeseen instabilities which that implies. And we would be faced with the immediate necessity of finding and developing nonstrategic nuclear supports for all those elements of our foreign and military policies which are now supported by the threat of nuclear retaliation. In particular, we and our allies would have to radically increase the numerical strength, firepower, mobility, training, and coordination of our conventional military forces. There are good reasons, therefore, for seeing whether and how best to get the cooperation of others in moving toward stability.

Reciprocal Action

Instability in the strategic nuclear equation is obviously a concern not limited to the United States. It is the primary concern of people everywhere. There is no reason to believe that even the Soviet leaders are merely engaging in duplicity when they express their anxiety about the sources of nuclear instability. They cannot view lightly the instabilities that stem from a powerful first-strike capability, itself highly vulnerable to a first strike by the enemy. Nor can they easily dismiss the dangers of accidental war. They may, of course, believe that they are the more advanced in certain aspects of the arms race, and view

certain instabilities as favorable to the retention and expansion of their domain. But their position in the past was quite different. Today, they may brandish their rockets, but "brinkmanship" was not initiated by them and it is not a Soviet monopoly. There are also grounds for believing that they, too, fear the spread of strategic nuclear weapons to smaller or less responsible nations.

If there are common interests among the world's governments and peoples to reduce sources of nuclear instability, it should not be impossible to induce a measure of reciprocal action from others if we ourselves move in this direction.

The current situation with respect to the testing of nuclear weapons illustrates both the possibilities and the limitations of reciprocal action. There is no formal international agreement regulating or prohibiting such tests, but it would be difficult for the United States to resume the testing of nuclear weapons on a unilateral basis. The political and propaganda price of such action would be high, and the Soviet Union could then resume its own testing program, claiming that we had, by our action, compelled it to do so. The Soviets, of course, are similarly restrained from initiating detectable tests. . . .

Thus, even though much can probably be done through example, political pressure, and diplomatic action to get others to move toward nuclear stability, there will still be areas in which formal agreement, backed by international control and inspection machinery, might make a further contribution to stability.

International Arms Control

Mr. Khrushchev has proposed total disarmament down to the level of those internal police forces required for internal security. It remains to be seen whether the inspection procedures, the measures and forces necessary to resolve and enforce the settlement of international disputes, and a phased approach to such an objective can be satisfactorily negotiated. But even on the unlikely assumption that these hurdles can be overcome, there

are even more basic objections which need to be thought about. They relate to the question of just how "stable" a completely disarmed, multinational world would actually be.

It is patently impossible to reverse or to otherwise "undiscover" those scientific and technological advances in weaponry that have already been made. In a world totally disarmed, if conflicts broke out between nations over vital political and economic issues—or even threatened to break out—a hectic race to manufacture and deploy the most efficient and destructive weapons made possible by technology could be expected to follow immediately. Perhaps one adversary would be in a relatively favorable position to win such a race. In the final analysis, modern technology and its weapons would still determine the outcome. Perhaps it is better that the influence of such weapons be brought to bear at the end of such a conflict rather than at the beginning, but that it can be permanently banned from influencing vital decisions in a divided world seems hardly possible.

Furthermore, it is almost as difficult to keep the clock of scientific progress standing still as it is to turn it back. Scientists will continue to think. Laboratories and computers will continue to add to scientific knowledge. Perhaps the focus of scientific thought can be turned to other subjects than armament, but that it can be kept from having any bearing on military technology is beyond the realm of the possible.

The Limitations of Inspection and Control

It is also doubtful that an inspection system could be devised which could disclose with a high degree of certainty that all nuclear material produced in the past has been accounted for. Geiger counters cannot detect the presence of plutonium, even at close range, if it is concealed in a lead box or underground. It has been remarked that the principal tools international inspectors would need to locate hidden plutonium would be

shovels and screwdrivers. There seems to be no way of attaining a high degree of assurance (even with the most elaborate inspection systems now conceived) that material sufficient for, say, a hundred nuclear weapons had not been secreted.

The point is that absolute stability is probably not attainable through arms control, disarmament, and inspection. Even more important, it is not certain that the greatest attainable stability is achievable by maximum disarmament.

Those who work in the field of electronics speak of the "noise level" of their systems. All the random and uncontrollable forces operating on and within the system are called "noise." If the noise level is high, it will blanket out weak signals, which the electronic system is attempting to handle in an ordered way. If the signals are strong, they will come through above even a considerable intensity of noise. There is thus a relation between the signal strength that must be maintained and the noise level of the system if it is to operate in a controllable way.

There may well be an analogous relationship between the level and character of armaments permitted under an international agreement and the number of concealed or clandestinely manufactured weapons that could disrupt the system. An arms-limitation agreement between the United States and the Soviet Union, which permitted each side to retain a number of retaliatory systems capable of surviving a first strike from the other—but which were insufficient in number, destructive power, and accuracy to execute a first strike themselves—could create a ratio of controlled to uncontrollable force favorable to nuclear stability.

Let us assume that such an arms-control system permitted each side to maintain 200 or 300 strategic nuclear weapons so hardened, mobile, and dispersed that to eliminate any one of them would require a substantial number of attacking weapons of great destructive power and accuracy. Under such conditions, even the surreptitious addition of several hundred weapons to the attack capabilities of one side or the other would not be

sufficient to upset the stability of the system. Any temptation to violate the system would be restrained by the knowledge that a very great effort, indeed an effort so great as to run a high risk of detection, would be required before the inherent stability of the system could be overcome.

It is highly unlikely that any foolproof arms-control and inspection system can ever be devised. But there are other important considerations bearing on this issue. The first is that, unless a determined effort is made to achieve some form of nuclear stability, the prospect for the next decade is one of high instability and consequent risk of all-out nuclear war. We will have to run very hard in the arms race just to keep the very dangerous position which we now occupy from becoming even more dangerous. The second consideration is that other nations, in addition to the United States, have an interest in reducing the instability of the nuclear relationship.

Scientific Sharing Could Aid Stability

One of the most difficult problems to be surmounted in this regard may be that presented by the accelerating rate of progress in military technology. It is conceivable that the preamble to any arms-control and regulation agreement should declare the intention of the parties to preserve conditions making continued nuclear stability possible. One of the commitments mutually undertaken in pursuit of that purpose could be openness of scientific and technological research. Such a commitment may not be enforceable in detail. Violation, however, to be effective would probably have to be on a scale lending itself to detection.

Another difficult problem would be that of sanctions. What could be done, short of war, if one side or the other believes the agreement is being violated? Inspection and investigation procedures could be available to the accused side to demonstrate that the accusations were false, if that is the case. If one side, however, willfully violated the agreement and persisted in its violation, what could be done? Various possibilities are con-

ceivable. One would be to then declare the agreement voided and to proceed to full mobilization. The secure retaliatory capabilities preserved under the agreement should give a high measure of protection against the threat that the original violator could achieve a decisive counterforce capability before mobilization added greatly to the defender's capabilities.

A further difficulty arises in relation to countries other than the United States and the Soviet Union. How is their security to be preserved, particularly against threats or encroachments by powers of the first rank? Again various possibilities are conceivable. One would be an international police force of some considerable size and strength. This possibility involves many problems concerning the manner in which such a force would be controlled, staffed, armed, and based, and the way in which decisions would be made as to when, and against whom, it intervened. It is hard to see how either the Soviet Union or the United States could agree to the establishment of a force sufficient in size and power to intimidate it if there were any possibility that this force could fall under the effective control of its enemies. Another possibility is that less powerful countries be permitted a small number of tactical atomic weapons to be used only in defense against otherwise superior external forces and only in and over their own territory.*

A few words may also be said on the problem of inspection under an arms-control agreement. Inspection is likely to be ineffective unless it is coupled with a system calling for the disclosure of pertinent facts by the nation being inspected. The inspection system could then be designed to test the accuracy of these disclosures. Overlapping sampling techniques, coupled with more detailed investigation where questions arise, can give a much higher degree of confidence that there has been no violation than can a system of inspection designed to reveal everything itself. Much further technical work needs to be done

* This proposal is made and detailed in Paul H. Nitze, "An Alternative Nuclear Policy as a Base for Negotiations," *East-West Negotiations*, the Washington Center of Foreign Policy Research, 1958, pages 28-37.

to work out the possibilities and limitations of various techniques of inspection, such as aerial photography, monitoring of factory production, and recording of electric power consumption.

The Problem of Communist China

Two further difficulties in achieving increased nuclear stability through arms control should be mentioned. The first is the problem of the asymmetry in the information that we and the Soviet Union now have about each other. The Soviet system lends itself to secrecy and ours does not. The Soviet leaders are unlikely to feel, therefore, that a scheme for equal exchange of information involves equal sacrifices toward stability by both sides. The second is that an effective and comprehensive scheme must include all important countries. An agreement which did not include Communist China, for example, would present most serious risks for our side.

A necessary corollary of seeking nuclear stability through arms-control agreements might, therefore, be a willingness to negotiate with the Chinese Communists on a basis reasonably likely to be acceptable to them. This might well require some radical and perhaps unwelcome changes in our policies toward that nation, including that of our resistance to its membership in the United Nations.

In summary, it may be said that much could probably be done toward increasing the stability of the strategic nuclear equation. There is, however, no easy and simple road to success. Much could be done through action by the United States alone. More could be done if our action were joined by the reciprocal action of others. Still more might be possible through the addition of agreed international control and inspection machinery. But there are serious policy issues and corollaries involved in the decisions seriously to seek stability. It would be an error not to see and deal with these issues as best we can and, if possible, in advance, if this is the road we firmly decide to follow.

2. The Price of Military Stability

By JAMES E. KING, JR.

Reflecting the dominant theme in current American thinking on arms control, Mr. King argues here that the attainment of military stability between East and West should be a central objective of U.S. national-security policy. He emphasizes the price that must be paid for such stability—both America and Russia must abandon efforts to achieve decisive military predominance.

In the essay from which this selection was drawn, the author identifies three kinds of stability on the strategic level—"imposed stability," "fortuitous stability," and "safeguarded stability." Imposed stability stems from the acknowledged and unchallenged military superiority of one of the superpowers, a situation believed to have existed in the period of America's nuclear monopoly. Fortuitous stability is a transitional "balance of terror" or military stalemate that may be the unintended result of the efforts of both adversaries to achieve military dominance. Such stability, says Mr. King, is a gift of particular circumstances and should be regarded neither as an automatic nor an enduring by-product of the arms race. Safeguarded stability, on the other hand, is the result of the deliberate and collaborative efforts of both adversaries to limit and control arms.

"Arms Control and United States Security," in *Arms Control: Issues for the Public*. (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961), pp. 96-98, 109. Reprinted with the permission of the author and publisher.

THE great new peril of our times is the threat that a thermonuclear war will be the explosive issue of the international search for power and security. The East-West contest is just now passing through a phase in which this danger seems to have reached unprecedented heights. So long as launching a surprise nuclear assault promises the assailant an overwhelming advantage over his victim, though the cost of his victory may be high, the atmosphere is unfavorable to stable military relations. For even if the intention of launching such an attack is absent, the temptation to employ the threat for political purposes is irresistible. This same condition is unfavorable to arms control, (1) because agreements reducing the first-strike advantage would weaken the political impact of the threat to use it, and (2) even more, because it is hard to conceive and apply controls that would be trustworthy in so tense a situation.

Ahead of us, however, appear to lie changed circumstances and a changed atmosphere, in which the immediate danger of a great nuclear war may be significantly diminished, and in which arms control may find a practical role to play with much less difficulty.

The term "arms control" will be interpreted to mean explicit international agreements based upon a recognized common in-

terest in two purposes: (1) to reduce the likelihood of war, and (2) if that fails, to diminish the violence in any war. It need not be assumed, however, that because there is a community of basic interest the parties to the arms-control negotiations will forbear to seek unilateral political and military gains from them. It is even possible that one of them will enter into an agreement with the deliberate intention of evading it later. There can be an acknowledged common interest without full mutual trust. Nevertheless, if the negotiations are to succeed, it is reasonable to suppose that both sides must make concessions. . . → Both sides will recognize the improvement in stability as the deterrent strategic forces become less vulnerable, and they will prefer to seek their security in safeguarding that improvement rather than in an attempt to reverse it by reinstating the first-strike advantage. But neither side can afford to do this without assurances that the other is doing it too. Specifically, if the United States is to exercise restraint by not trying to build a decisive counterforce posture, we need more assurance than our current information sources can afford us that the Russians are not taking advantage of our restraint to build a counterforce system that will endanger our deterrent. Presumably, the Russians need not be concerned to the same degree about the failure of *their* sources of information to alert them to our actions in time to permit them to take remedial measures. Consequently, the United States' concession to the Soviet Union may be somewhat different from the Soviet concession to the United States.

We Must Abandon the Goal of Military Dominance

What is it we have to concede? The answer is that *we can abandon our intention, or hope, of achieving a position of pre-dominance that would enable us to impose stability*. It is well that this be stated bluntly, and without qualification, to avoid misunderstanding. It has been explained that counterforce may

be an essential of the stability built upon mutual deterrence. The question where we should or can stop (how much counterforce is enough?) has been described as perhaps the most difficult to answer if we intend to accept and support the fortuitous stability. There will be great pressures to push onward, at the very least to achieve a margin of safety. If we do, we must expect the Russians to follow, thus compounding the arms race and hastening the return of a more unstable situation. If we do not, we risk being caught short either by Communist improvement and expansion of which we have not been warned in time, or by some unforeseen technological development. Arms control may give us the requisite assurance to justify these risks.

Why should the Russians accept as a concession this disavowal of our intention, if the openness of our society gives them ready access to all the information they need to assess our intentions? Perhaps they will not. It is always possible, even probable, that they would regard the exchange of inspection rights as no bargain. But it is also possible they will accept.

Despite their sanguine claims regarding their own economic progress, there is little doubt that the Russian leaders are fully aware of the superiority of United States industrial power. Our capacity to produce weapons when fully mobilized, proved in two world wars, must always be prominent in their calculations. At the same time, the chances are that the Kremlin is nearly overwhelmed by the plethora of information, much of it conflicting, that comes from the United States. It must surely be exceedingly difficult for the Russians to assess our intentions, or even our capabilities.

For example, testimony before the committees of Congress on defense appropriations is normally contradictory. In and out of government, our own experts arrive at opposite conclusions after reading this testimony, even when they have access to the classified material upon which it is based. Further, as long as we continue to support costly armaments, both the allegations of danger to our security that would follow a reduction of ex-

penditures, and, on the other hand, the awesome threat of our weapons, are sure to receive sensational publicity. That is the way our democracy works. For these reasons, the Soviet Union and its bloc might conceivably welcome more comprehensive information regarding our real intentions. And this they might receive if they were permitted to determine (within limits) what items of information they need, and if there were inspection procedures capable of assuring them that they were getting this information.

The first assumption of this examination of arms control, then, is that both sides (all parties) must explicitly abandon the effort to achieve an overwhelming offensive capability for their long-range nuclear strike forces. The second assumption is that it is not possible to abolish nuclear weapons, by agreement or otherwise. The science and technology that builds them cannot be unlearned, and those already built can be too easily hidden.

3. The Technology of the 1970's and the Arms Race

By HERMAN KAHN

For several years, Herman Kahn has been trying to persuade policy makers and scholars to think about the “unthinkable” subject of general nuclear war. In his 651-page volume *On Thermonuclear War*, he grapples with the probability, nature, and consequences of different kinds of strategic war—and with ways of making strategic war less likely and less destructive should it occur. He is a strong advocate of a comprehensive civil-defense program and of a serious arms-control effort.

In the following passage from an essay on the dangers of the arms race, the author focuses on the probable technology of the 1970's. Mr. Kahn deals with the hazards of “cheap” atomic weapons and other “gifts” of science. The pace of a galloping technology, he says, makes strategic and political “doctrinal lags” almost inevitable. He concludes on a somber note: “We may not have much time in which to work.”

“The Arms Race and Some of Its Hazards,” *Arms Control, Disarmament, and National Security*, ed. Donald G. Brennan (New York: George Braziller, 1961), pp. 117–21, and the American Academy of Arts and Sciences, in whose journal, *Daedalus*, this article first appeared. Reprinted with the permission of the author and the publisher.

♦♦♦ I would like to deal with some of the possibilities for the late sixties and early seventies, which I will label 1969. We now have to take into account more than just the extrapolation of current technology. We have to consider the possibility of "break-throughs" and other surprises. Although it is not possible to limit or describe in advance what break-throughs might occur, it is possible to discuss some projects currently being studied which might be called break-throughs, if successful. This method of trying to estimate the total impact of technological progress is likely to involve some large underestimates of the total change, since one can almost guarantee that many startling and unexpected developments will occur. I will try to make up for this by some judicious exaggeration in the areas to be discussed, for such an exaggeration will give a better "feel" for the over-all possibilities for the late sixties or early seventies than a more sober discussion of the few items I will consider: cheap, simple bombs; cheap, simple missiles; cheap satellites; controlled thermonuclear reaction; other sources of cheap neutrons; other sources of nuclear fuels; californium bullets; ground-effect machines; reliable sensors; super-calculators; cheap calories; medical progress; advanced materials; cheap, fast transportation (for limited wars); reliable command and control; Domsday Machines,* and disguised warfare.

* A Domsday Machine, a theoretical device "invented" by Herman Kahn, is a reliable and securely protected machine capable of destroying almost all human life. It would be automatically triggered if an enemy committed any one of a list of designated violations.—*Editor*.

When we enter the 1970's, the most advanced nations, at least, will know in theory how to make simple bombs and missiles, and in the absence of explicit or implicit controls will be making them in practice. For this reason, I have put cheap, simple bombs and cheap, simple missiles at the top of the list because, even with arms control, and certainly without it, these are likely to be the most characteristic features of the late 1960 or the early 1970 period. They may or may not present the most important (and dramatic) problem. This will depend on which nations actually have weapons in their stockpiles, on the explicit and implicit controls, and on the state of international relations.

Under the current programs, 1969 may be a little early for the diffusion of these devices to other than "advanced" nations. It is very difficult to predict the rate at which the technology, materials, and information will be disseminated. Even without explicit controls, it might be the mid-1970's or even a later period before they become cheap and simple for the majority of "developed" nations. But there are many things that could accelerate this dissemination process: the use of nuclear weapons in a limited war; successful programs for the peaceful uses of nuclear explosives in the mid-1960's might at least make nuclear "devices" widely available; the deliberate diffusion of nuclear technology, by either the United States or the Soviet Union, to enough allies so that there will be no more secrets; a break-through in technology or materials, etc.

The Problem of Cheap Atomic Weapons

As an example of this last possibility, consider the fusion reactor. It is improbable that this device will be practical by 1969; most experts in this field are somewhat doubtful about any real success before the year 2000. Let us, however, go ahead and outrage the experts by assuming not a qualified, but an

outstanding success—such a success that even relatively primitive nations will find it possible either to build or buy a fusion reactor and thereby acquire a virtually unlimited source of cheap power. This spectacular gift of technology has a significant side effect: it gives off neutrons very copiously, so copiously that it may not be exaggerating to state that the neutrons are for all practical purposes free.

Free neutrons would mean that many kinds of nuclear fuels would be very cheap. With these nuclear fuels and with the kind of technology that is likely to be available in 1969, it may literally turn out that a trained and technically minded person, even one who is a member of a relatively primitive society, would be able to make or obtain bombs. This would raise forcefully the question of the illegal or uncontrolled dissemination of bombs. (One can today buy machine guns, artillery, tanks, and fighter aircraft on the gray market.) Thus, the 1969 equivalent of the Malayan guerrillas or the Algerian rebels or the Puerto Rican nationalists, or even less official groups, such as gangsters and wealthy dilettantes, might be able to obtain such bombs.

Even if the controlled thermonuclear reaction does not prove to be a success by 1969, there are other possibilities for the cheap production of neutrons. For example, many of the commercial uses of nuclear devices would release neutrons as a by-product. This might lead to either the clandestine or open production of weapon-grade nuclear fuels. There are also possibilities that simple and inexpensive methods for producing weapon-grade nuclear fuels will be developed. It is also possible that we and others will learn how to make bombs using only or mostly materials already widely available, such as deuterium and lithium. (The widely discussed small "clean" bomb would probably use such materials.) Briefly, 1969 (though more likely 1979) may see the advent of the era of the conventional nuclear bomb, in which (in the absence of adequate controls) any "legitimate" nation can get some models, and some illegitimate groups

or governments may also get access to nuclear weapons, but presumably under more onerous conditions than those to which legitimate purchasers are subject.

Increasingly Available and Less Usable Force

. . . I have scarcely been able to touch upon the complexities of the technological arms race and the stability of the United States-Soviet balance of terror. I have tried to point out that technological process is so rapid that there are almost bound to be doctrinal lags. These doctrinal lags will in themselves be dangerous, leading to important gaps in our preparations, the waste of badly needed resources on obsolete concepts, the neglect of possible strengths, the excessive use of especially glamorous tools, and, possibly most important of all, heightened possibilities of serious miscalculations or accidents because we have not had time to understand and make provisions for the requirements of the newly installed systems. To the extent that arms-control measures are supposed to alleviate dangers or costs by allowing the current "balance of power" status and military competition to be conducted, by agreement, at cheaper or safer levels, or to the extent that one hopes to increase each state's objective capability to prevent surprise attack or other disaster, this inability to understand "the military problems" introduces almost intolerable complications. (The reason for the adverb "almost" is that we have these complications, whether or not we have arms control.) I have almost ignored the even more complex problem of the conduct of international relations in a world in which force is becoming both increasingly more available and increasingly less usable, a problem that is complicated by the spectacular increase in the number of sovereign nations, by increased nationalism, militarism, and "ambitions" in these new nations and governments, and by the revolution of rising expectations.

Any attempts to control the arms race must be able to live

with all the stresses and strains that the above problems will create. It is most unlikely that all of these problems will be solved in an atmosphere of good will and common fellowship, or by the use of *ad hoc* committees and intuitive judgments derived from experience in almost irrelevant situations. And we may not have much time in which to work.

4. Arms Control and the Balance of Power

By HEDLEY BULL

"The chief object of arms control is international security," says the author of this essay. With this standard in mind, Mr. Bull analyzes the character and implications of the East-West arms race. He concludes that measures to control arms can best contribute to security if they are designed to preserve and strengthen a balance of military power.

A student of political theory, he relates the classical concepts of the balance of power to the unique problems of the nuclear-missile age. This essay is drawn from a perceptive and wide-ranging study, *The Control of the Arms Race*, published for the Institute for Strategic Studies in London.

The Control of the Arms Race (New York: Frederick A. Praeger, 1961), pp. 37-62. Reprinted with the permission of the author.

IN international society as we know it, security is not provided by the concentration of military power in an authority superior to sovereign states, but rests on a balance of power among them.

The existence of a military situation in which no one power or bloc is preponderant is a most precarious and uncertain source of security. The idea of the balance of power, like that of disarmament, rests on the abstraction of the military factor. If there is a military balance between opposed powers, such as to leave them alike without prospect of decisive victory, there is no guarantee that they will act in accordance with an appreciation of this balance or even that they will be aware that it exists. The inherent uncertainty that surrounds estimates of military power, the play of the contingent in military operations themselves, the inadequacy of intelligence and its frustration by counterintelligence, the willingness of governments to take risks despite unfavorable odds, their frequent failure even to weigh the odds, render peace something precarious even where the balance of power is most stable. Military balances, moreover, do not remain stable for long periods but are inherently temporary. The technological, economic, demographic, political, and other ingredients that go to make up the military strength of each side are subject to constant change, as is the attitude of each

side toward the existing balance, which it may find satisfactory and accept, or find unsatisfactory and seek to overthrow.

The unsettling effect of changes on the balance of power is mitigated by the practice of making adjustments in the system of alliances: Changes in the diplomatic combinations of the powers enable the balance among them to accommodate changes in the intrinsic strength of each of them. But the recourse to the adjustment of alliances does not exist for two blocs between whom the world is divided. If, as now, in strictly military terms, neither antagonist can substantially affect the balance by throwing the strength of further powers into the scales, this balance is determined by the efforts of each in the arms race: In the event of the swing of the balance toward one of them, there are no new worlds the other can call into being in order to redress it. Military balances which are unstable and fluctuating are notoriously corrosive of international security: They give rise, in the power with a temporary preponderance, to the counsel of preventive war. . . . Military balances have contributed to the avoidance of particular wars, but they are not a guarantee against war; on the contrary, war is one of the instruments by which the balance is maintained. The chief function of the balance of power in international society has not been to preserve peace, but to preserve the independence of sovereign states from the threat of domination, and to preserve the society of sovereign states from being transformed by conquest into a universal empire; to do these things, if necessary, by war.

*Is There Any Acceptable Alternative to a
Balance-of-Power Strategy?*

Though it is no panacea, the existence of a military balance between politically opposed powers and blocs is one of the chief factors making for peace and order among them. We shall be able to appreciate the importance of the balance of power if we consider carefully what, in the short run, the alternatives

to it are. If—like the critics of the balance of power, from Richard Cobden to President Wilson to the present supporters of unilateral disarmament—we contrast the security provided by a military balance with that provided by some imagined political system that might arise in the long run, or with our image of some system that has occurred in the past, we shall be very conscious of its shortcomings. If we examine the present military balance alongside our image of a just and liberal world government, or total disarmament, or free trade and universal brotherhood, or the Roman peace, we must be impressed with its dangers. But if we examine it alongside the alternatives to it that exist now, the alternatives that we by our action or inaction can bring about, we must form a very different impression. The alternative to a stable balance of military power is a preponderance of power, which is very much more dangerous. The choice with which governments are in fact confronted is not that between opting for the present structure of the world, and opting for some other structure, but between attempting to maintain a balance of power, and failing to do so. The balance of power is wrongly regarded as a synonym for international anarchy; rightly regarded as something which mitigates an anarchy which might otherwise be more rampant. It is not a panacea. But it exists now; and among those forces which make for international security and can be built upon by action that can be taken now, it is one of the strongest. To what extent is there a stable balance of military power between the Western and Soviet blocs at the present time?

The Soviet-Western military balance should be considered at two levels: that of strategic nuclear warfare and that of limited warfare. It is necessary first to establish the distinction between these kinds of warfare and justify their separate treatment.

The varieties of strategic experience do not fall into the neat divisions in which we think about them. Nevertheless, if we are to think about them, distinctions we must have. At the present time, one important contrast is between strategic nuclear war

and other kinds of war, which shall be called limited war. Rightly or wrongly, strategic thinking is more concerned with this contrast than with any other. Strategic warfare is warfare directed at the sources of the enemy's power—his cities, population, resources—rather than at his armed forces, and at his opposing strategic forces. Nuclear warfare is warfare involving the use of nuclear explosives. Strategic nuclear warfare is the bombardment of cities, populations, and resources, and of opposed strategic forces, by missiles and bombers carrying nuclear explosives. The distinction between strategic nuclear war and limited war is a crude and inelegant one. In the first place, all wars are limited, more or less—in the objectives for which they are fought, the resources they consume, the combatants that are engaged in them, and the weapons they employ. The notion of "total war," war without any limits, does not bear examination. Strategic nuclear war is only less "limited" than that for which the term has been reserved. In the second place, there are other important distinctions which cut across this one—that between nuclear and non-nuclear war, and that between war which involves the two principal powers in the Soviet and Western alliances, and war which does not. In the third place, each of these kinds of warfare may take a variety of forms. Strategic nuclear warfare may be directed at either cities and resources, or at opposing strategic weapons, or both. It may take the form of an uninhibited and instantaneous exchange of all available weapons in a frenzy of destruction—which is the popular image of strategic nuclear warfare—or it may take the form of bombardments which are closely controlled and limited by specific political objectives, and which do some justice to the principle of the economy of force, the principle of not using disproportionate forces. The nuclear bombardment of a greatly inferior power by a superior power, of a non-nuclear power by a nuclear one, may be leisurely and piecemeal. According to some military theories, strategic nuclear war, even when waged between powers of comparable strength, may take the form of isolated acts of

retaliatory bombardment of cities, or the form of a protracted duel in which each seeks out the strategic weapons of the other, while attempting to avert inadvertent destruction to civil society—each power being able to deter the other during the war from increasing the scale of the conflict. Limited war, as here defined, includes a variety of contingencies, from the clash of large-scale forces on the battlefield, perhaps equipped with nuclear weapons limited in range and destructive power to guerrilla operations. For all these reasons, and because it is founded upon a current fashion in strategies and weapons, this distinction is unsatisfactory. But because other distinctions are more unsatisfactory, and because it plays such a prominent part in military thinking, which is important in itself, quite apart from its correspondence to actual military events, it is proposed to employ it.

Strategic Nuclear War and Deterrence

For at least the first decade after World War II, the United States had a preponderance of strength at the level of strategic nuclear warfare. At some point after this, the United States lost this preponderance. There arose a balance of power in respect of strategic nuclear capacity between the U.S. and the Soviet Union.

The coming of this balance had a profound effect upon Western thinking about strategic nuclear warfare and its place in international politics. One effect was that it led to a revision of Western thinking about the relation between American capacity for strategic nuclear warfare and American foreign policy. During the period of her superiority in this field, the United States was able to use her capacity for strategic nuclear warfare as an instrument of policy, and did so by attacking Japan in 1945 and by making the threat of strategic warfare against Russia the basis of her policy of protecting Western Europe. She was also under pressure to employ this form of warfare against China during the Korean War and in the closing stages of the war in Indochina.

The more extreme interpretations of the policy of massive retaliation, enunciated by Mr. Dulles in January, 1954, tended to make the capacity for strategic nuclear warfare almost the exclusive military basis of United States foreign policy. The achievement by Russia of a capacity for strategic nuclear warfare against the United States comparable to that by which Russia had been threatened radically altered the position. The American threat, which in the closing years of the American preponderance was being made in relation to a wider and wider range of possible Russian or Communist actions, and in support of a greater and greater number of Western territorial positions, now ceased to carry credibility in relation to many of them. The range of possible Russian or Communist action against which the American capacity for strategic nuclear warfare provided a credible deterrent began to shrink; and American military policy, as it sensed this change, came to rely less exclusively upon this military capacity. . . .

The coming of the balance at the level of strategic nuclear warfare thus led to disillusionment in the West about strategic nuclear warfare as an instrument of Western policy. It came more and more to be held in the United States, and in Britain—where the Defence White Paper of 1957 gave this doctrine its classic statement—that strategic nuclear war was not an instrument of policy, that the catastrophe involved in such a war was such that its occurrence must always represent the breakdown of policy, and that the purpose of possessing this capacity was not to arrest an enemy attack by the waging of strategic nuclear warfare, but (though the threat could in fact be executed) to prevent an attack by the threat to do so: not *defense*, but *deterrence*. Deterrence of the enemy, which has always been among the objects of military policy, thus attained the novel status of the supreme or even the sole object of this particular kind of military preparation. This, at all events, is the idea of deterrent strategy in its purest form. It implies that military policy is concerned not with affect-

ing the outcome of a war, but only with preventing its occurrence; that the outbreak of war is the signal for the abandonment of all policy directed toward the survival of the nation; that the attempt to minimize the effects of the enemy attack by civil defense, by the interception of enemy delivery vehicles in flight, or by the destruction of them before they are launched, is not worth while. It assumes that the only military response to the failure of deterrence is the automatic execution of the retaliatory strike—directed not at the enemy's forces, which is what is required by the logic of a situation in which war has already broken out, but at his centers of population, which is required only by the then outdated logic of the threat that has failed. There are, perhaps, few adherents of the idea of deterrence in this pure form, though in Britain something very close to this is widely believed; and in the United States, where it has never enjoyed the same degree of support, it exerts a profound influence on the shaping of military policy. In the event of the outbreak of war, the failure of deterrence, a situation quite different from that in which the policy of deterrence was implemented, would have arisen. Whether or not, in this situation, military policy will continue to be guided by the outdated logic of deterrence we do not know.

The coming of the strategic nuclear balance did more than affect Western thinking about the place of strategic nuclear warfare in Western policy. If strategic nuclear warfare could not be an instrument of policy for the Western powers, this might also be true of the Soviet Union. If the growth of Soviet strategic power has weakened the West and made the Soviet Union secure from Western attack, it has still left the West fairly secure from Russian attack. In the idea of "deterrence," which was first used to describe a Western strategy designed to preserve the security of the West, there came to be seen a source of security for both sides. The balance of strategic nuclear power was viewed, and sometimes welcomed, as providing *a system of international*

security: “the Pax Atomica,” “the balance of terror,” “the nuclear stalemate,” or “the system of mutual deterrence.” The powers in the race for military ascendancy had turned a corner and found themselves, to their surprise—and delight or dismay—in Kant’s dream and Moltke’s nightmare: the condition of perpetual peace.

Has War Abolished Itself?

There can be no question more central to this study than whether or not, and to what extent, the balance of strategic nuclear power provides a source of general security. For if it does, this is something which will greatly affect our attitude to disarmament and arms control. It has been argued above that, in general, a balance of power is an important source of security in a divided and anarchic world, but that the security it provides is something precarious. It is sometimes claimed on behalf of the strategic nuclear balance of power that it provides a source of security qualitatively different from, and superior to, that provided by previous military balances. In my view, the uniqueness of nuclear weapons—their cataclysmic effect on the course of politics—is exaggerated as much by those who welcome this development as leading to peace through terror as by those who deplore it as entailing an inevitable holocaust. Both views arise from what is the bane of much thinking about politics—the conviction of the uniqueness of present problems. The strategic nuclear balance is a source of security in a world which remains as anarchic and divided as ours, but, like other kinds of military balance, a precarious one.

The idea of the strategic nuclear balance as the grand panacea commonly directs attention to two of its features which appear to make of it a firmer guarantee than previous military balances have been. One is that while it lasts it renders strategic nuclear warfare a catastrophe to both sides, and the deliberate choice of it an “irrational” act for both sides (this is what is conveyed by the expression “mutual deterrence”). The other is that it is bound

to last: It is an inherently stable balance of power (a "nuclear stalemate"). It is convenient to discuss these two ideas separately.

The idea that while the strategic nuclear balance lasts—so long, that is, as each side is able to threaten the other with a strategic nuclear assault—"war has abolished itself" or is quite unlikely to occur takes a number of forms. The most common view is that the kind of war which has "abolished itself" is only strategic nuclear war, or, at all events, only nuclear war; and this, only between the present nuclear powers. However, sometimes more radical claims are made for "mutual deterrence." It is sometimes held that all kinds of wars among the present nuclear powers are unlikely, not only strategic nuclear war, but also more limited kinds of war. And it is sometimes held that war is a remote contingency not only among the present nuclear powers, but also among future nuclear powers. Consequently, the spread of nuclear weapons is to be welcomed as strengthening international security, not feared as undermining it.

The view that strategic nuclear war will not occur sometimes has no firmer support than an appeal to metaphysics: a claim that such a war is an unimaginable catastrophe which will not occur because it must not. This is a view which is not often made explicit, but which lurks unstated in much of our thinking, and provides even the least metaphysically minded of us with a furtive source of comfort. However, history is littered with catastrophes unthinkable and unimaginable to their victims, who placed their trust in a logic of history which deserted them in their hour of need.

Another view appeals not to metaphysics, but to the essential nature of political man. The catastrophe of strategic nuclear war, on this view, may in principle occur, but it will not, at all events, be deliberately brought about: No "rational" government or person will choose such a catastrophe. Where this argument is used to support the idea of the improbability of strategic nuclear war, it contains three important assumptions: that governments act

"rationally"; that the choice of strategic nuclear war is demonstrably "irrational"; and that war is unlikely to occur unless it is deliberately chosen. All of these assumptions are erroneous.

In general, there is no such thing as "rational action." The notion that there is a distinction between rational action and other kinds of action, or between reason and the passions, is indefensible in philosophy and psychology, but it has somehow survived in political theory. The notion of "rational action" is useful only when it is defined in a particular way, for the purposes of a particular body of theory. A great deal of economic theory proceeds upon some such notion of what is "rational action" for "economic man." A great deal of argument about military strategy similarly postulates the "rational action" of a kind of "strategic man," a man who on further acquaintance reveals himself as a university professor of unusual intellectual subtlety. In my view, this kind of formal theorizing is of great value in the discussion of strategic matters when it represents not a prediction of what will happen in the world but a deliberate and conscious abstraction from it, which must later be related again to the world. It is no disparagement of this kind of theorizing—for those who engage in it fully recognize this point—to complain that where "rational action" is defined to exclude the deliberate choice of military catastrophe, this is not a concept in terms of which it is possible to account for any great part of the history of international politics, or to base any confident prediction about its future. The idea that war is a catastrophe which no government will choose to bring about has been a commonplace of writing about international relations since the turn of the century. The decisions of governments on matters of peace and war, like those taken by the European powers in July and August, 1914, do not always reflect a careful weighing of long-range considerations, or a mastery of the course of events. The questions which strike the analyst of these decisions a generation afterward as important appear crudely answered or, more often, not even asked. The govern-

ments appear to him to stumble about, groping and half-blind, too preoccupied with surviving from day to day even to perceive the direction in which they are heading, let alone steer away from it.

Can Nuclear Warfare Be "Rational"?

Whatever confidence we may or may not have that governments in the future will not choose catastrophe, we should not assume that the choice of strategic nuclear warfare is always the choice of catastrophe. There are situations which we can readily imagine—and which, though perhaps they do not exist, are not remote from present circumstances—in which “strategic man” himself would choose the initiation of strategic nuclear warfare. There are a number of examples which might be explored, but the most important is the deliberate choice of a surprise attack which promises to destroy or to cripple the strategic nuclear forces of the enemy. In the context of the great offensive power of present-day strategic weapons, and the relative ineffectiveness of defensive measures against them, each side’s prospects of victory lie in destroying the weapons of the other before they can be brought into action. There have probably been periods during the confrontation of Russia and America as strategic nuclear powers in which such a strategy has been feasible for the United States. Some writers believe that the “missile lead” and “intelligence lead” of Russia, in a period in which most American strategic weapons remain vulnerable to such attack, may make such a strategy feasible for Russia. It is true that a surprise assault of this kind appears an enterprise of immense risk, even under the most favorable military conditions. The power embarking upon it would require great confidence about many things. He would need to be very sure that his weapons were accurate enough, his intelligence about the enemy’s weapons reliable enough, their vulnerability proved enough, to ensure that the retaliation visited upon him would be slight enough to make the

enterprise worth while. Yet it is not enough to show that the launching of a strategic surprise attack would be always a risky enterprise. Whether or not it would be embarked upon would depend on what the alternative to it was. There are a variety of circumstances in which an act of desperation might appear the most "rational" solution. The receipt of information, perhaps false information, that the nation concerned was about to be attacked would be one such circumstance. Another would be the imminence of an intolerable political defeat, suggesting that if there is no resort to war, defeat by other means is inevitable; the belief that the balance of power was certain to become unstable and swing in favor of the opponent. These are circumstances which, when combined with military circumstances favorable to a surprise attack, might well suggest that the initiation of war is the least unfavorable outcome, when there is nothing to choose from but disaster, or great risk of disaster, of one kind or another.

Finally, the idea that strategic nuclear war between the present nuclear powers is made quite improbable by the "irrationality" of choosing it, overlooks the possibility of war by accident. Even if we were to assume that "strategic men" are kings, and that situations do not arise in which it is "rational" for them to choose war, there are a variety of other ways in which war might begin, which may be grouped under the heading of "accidental war," in the most general sense of that term. War may be brought about:

- (i) by technical accident, such as the explosion of a bomb, the misreading of a warning system, the misfiring of a missile;
- (ii) by the choice of persons not in supreme authority, arising from the breakdown of the system of command and control;
- (iii) by the "catalytic" action of some third power hoping to provoke a war;
- (iv) by the decision of a nuclear power to attack a non-nuclear one, leading to the involvement of other nuclear powers;

- (v) by the "escalation" of a limited war, especially of one involving the use of tactical nuclear weapons, to which the forces of both sides in Europe are increasingly committed.

How Stable Is the Nuclear Balance?

The second feature of the strategic nuclear balance of power which is held to distinguish it from other kinds of military balance, and to make of it a firmer source of international security than these other kinds of balance have been, is that it is an inherently stable balance or "stalemate," and has, in consequence, a tendency to perpetuity which the delicate and fluctuating military balances of the past have not had.

Our knowledge of the history of past arms races and military balances should make us skeptical of this notion of the stalemate or inherently stable balance in strategic nuclear capacity. This skepticism can be supported by analysis of the present military balance. In the United States, Mr. Albert Wohlstetter of The RAND Corporation, in an article which has had a great influence upon thinking about strategic matters, has advanced powerful arguments suggesting that the balance of terror is not something automatic or something flowing from the mere existence of nuclear weapons, but that even for the United States the deterrence of Russia is a most difficult enterprise requiring sustained efforts.* He states that the ability of the United States to retaliate in the event of a Russian attack is something which is continually called in question by the measures taken by Russia, and which can be placed beyond question only by measures taken continuously in the United States. If the continued deterrence of Russia by America is to this extent uncertain, so also is the deterrence of America by Russia, and how much more so the deterrence of major powers undertaken by minor nuclear powers.

* See Albert Wohlstetter, "The Delicate Balance of Terror," *Foreign Affairs* (New York), January, 1959.

If the persistence of the strategic nuclear balance is therefore uncertain in the short run, in the long run it is much more uncertain. Both the United States and the Soviet Union are actively engaged in the attempt to break through the stalemate. They are seeking to improve defenses against bomber and missile attacks. They are studying the problems of civil defense. They are gathering information about the whereabouts of opposing retaliatory forces, hiding that of their own, and they are pouring vast resources of skilled manpower into technological innovations of all kinds. There are serious obstacles in the path of the attempt to break through the stalemate—the increasing diversity of weapons systems on each side, which facilitates the rendering of bases invulnerable, and the immense cost of this enterprise. But however skeptical experts who take a short-range view of this problem may be, we cannot, bearing in mind the extraordinary rate of technological innovation in the military art in recent years, and the near certainty that it will continue to accelerate, be confident that over a long period one nation will not place itself in a position of not being deterred by the others.

Limited War and the Balance of Power

At the level of strategic nuclear warfare, there is a balance of power between the Western and Soviet blocs, but at the level of limited warfare there is a Soviet preponderance. If the Western powers have been able to maintain their positions on the periphery of the Soviet bloc, this has been at the price of bringing the pressure of Western strategic nuclear power into play at this level. The Western powers have in the past met the Soviet conventional preponderance by the threat of general nuclear war. During the period when the Western powers enjoyed a strategic nuclear monopoly or superiority, this was a position which they were able to adopt at no great risk to themselves. In the presence of a balance of power in strategic nuclear capacity, however, this position involves them in great risks: of defeat in a limited war

should their threat be exposed as a bluff; of the precipitation of a generally ruinous strategic nuclear war were they to execute the threat. The absence of a balance at the level of limited warfare prejudices the security of the Western powers, threatening them with the piecemeal loss or erosion of their territorial positions brought about by the preparedness of the Soviet Union to exploit its preponderance, whether by engaging in limited war or by adopting forward political policies supported by the threat to engage in it. In a sense, also, this absence of balance prejudices the security of the Soviet bloc also: For by rendering the Western powers dependent on nuclear armaments over the whole range of their policy, it increases the likelihood of nuclear war and constitutes an obstacle to the acceptance by the Western powers of measures of arms control in the field of nuclear weapons.

In the hope of extricating themselves from the position of having to choose between surrender to Soviet threats of limited war and strategic nuclear warfare, the Western powers have equipped themselves with the doctrine and the armament of limited nuclear warfare, warfare which might enable their forces, inferior in numbers, conventional weapons, and mobility, to arrest the advance of forces superior to them in these respects, without precipitating a general nuclear war. This decision was taken by the North Atlantic alliance in 1954, and the training and equipment of troops in Europe according to the doctrine of tactical nuclear warfare has proceeded apace. It is not proposed here to subject this doctrine to the exhaustive analysis it requires, except to say that it has not succeeded in removing either horn of the dilemma it was intended to resolve. On the one hand, the distinction between tactical and strategic nuclear warfare is exceedingly difficult to draw. Though in a war, any means which gives reasonable promise of limiting the scale of the conflict, even if only for a day or an hour, so as to preserve the channels of negotiation between the belligerents, should be adopted, a number of factors cast doubt upon the likelihood of any prolonged observation of this distinction in the European theater of war.

The distinction in principle between tactical and strategic nuclear warfare is that in the former case hostilities are confined to a particular theater of operations and are directed only toward armed forces in it, whereas in the latter they are not so confined. In the European theater, however, there must be taken into account the degree of destruction which would be caused to nations in the theater of operations; the sheer quantity of tactical nuclear explosives now available, their decreasing cost and weight even while the maximum explosive power of nuclear weapons in the hands of limited war forces remains the same; the increasing range of missiles in the hands of limited war forces; the difficulty of subordinating local commanders to central direction in the confusion of war. It is clear, to say the least, that the initiation of nuclear warfare in a local military operation could not be accompanied by any very confident expectation that the operation would remain a local and limited one. On the other hand, it is doubtful whether the other purpose of the strategy of tactical nuclear warfare, the avoidance of defeat in a limited war, is now served by it. Since this strategy was first debated, two important changes have occurred. One is that the Soviet Union herself has come to acquire a capacity for tactical nuclear warfare comparable, if not superior, to that possessed by the Western powers in Europe. The other is that the military doctrine which underlay it—that tactical nuclear warfare favored the numerically inferior side and restored the power of the defensive in land warfare—has now been widely criticized. The position still remains, therefore, that the Soviet Union may be able, by taking the initiative in the use, or the threat of the use, of her preponderance of conventional forces, to force the Western powers into choosing between defeat and general war. The very uncertainty of the Western response to such initiative may exert a deterrent effect on them. Nevertheless, the weakness of the Western powers at the level of limited war, their need to invoke the threat of strategic nuclear retaliation to compensate for it, tends to blur the distinction between strategic nuclear war and other forms of war,

to undermine their own security against local defeats, and the security of both sides against general nuclear war.

Arms Control Must Enhance Stability

It has been argued that a balance of power between opposed nations or alliances—the possession on both sides of such forces and weapons that neither is able to impose its will on the other—is an important though precarious source of international security; precarious, because while it persists, it provides no guarantee against war and defeat, and because it is not bound to persist but is inherently unstable; important, because in a world that is armed and divided—armed because it is divided and likely to remain divided—no less precarious source of international security is available. If this is so, measures of arms control which undermine the balance of power will defeat their own purpose. On the other hand, internationally agreed measures of arms control may have an important place in any concerted attempt of the powers to maintain a balance.

The chief means by which balances of power are maintained or upset are adjustments in armaments and alliances. A state may increase its military strength by increasing or improving its own armaments, or by gaining allies or depriving its opponents of them. In the nineteenth century, the attempt to maintain a balance by concerted international action was made through the adjustment of alliances and the adjustment of territorial boundaries, and not to any significant degree through international agreement about the character or the size of military forces and weapons, although agreement about territorial boundaries, settling as it did the distribution of military assets as important at that time as strategic position and population, may be regarded as a form of arms control. At the present time, however, the armaments competition plays a much more important part in determining the ratio of military power between the opposed blocs than does the competition for allies. If there were to be a

stabilization of the military balance, it would have to be by the adjustment of armaments. Moreover, if it were to last for any length of time it would have to be by *arms control*. The uncontrolled arms race has fortuitously led the two opposed blocs in recent years into a system of balance at the strategic level, which provides a modicum of security—including a balance of strategic nuclear power, which gives a reasonable promise of preserving the peace through mutual deterrence. But there is no guarantee that, if the arms race remains uncontrolled, it will not lead the powers out of this situation of relative security as fortuitously as it led them into it. The nuclear stalemate will not maintain itself: If it is to persist, it will have to be maintained, and the joint consideration by the two military blocs of what cooperative measures they may take in order to see that it is appears to be one of the most likely sources of its maintenance.

The idea that measures of arms control should preserve, or at all events, should not prejudice, the military balance has not been absent from disarmament negotiations. It was recognized in the negotiations of the League period, and it has been recognized in recent negotiations, that any general reduction would have to preserve an agreed balance, replacing a balance at a higher quantitative and qualitative level with one at a lower level. The controlling principles for disarmament advanced by the Western powers in June, 1960, included the principle that no state should obtain "a military advantage" at any stage of the disarmament process.

However, the military balance is itself a most important source of security, and it is not necessarily made a more important one by being reduced to a lower level in terms of strategic or limited-war forces. There are powerful arguments which suggest that the maintenance of a stable Soviet-Western balance may require high levels and advanced kinds of armaments, and may even be served by the further prosecution of the arms race in certain fields: at the very least, that there is no necessary presumption in favor of disarmament rather than rearmament in the design

of a system of arms control. Though they may apply to many kinds of military balance, these arguments have been presented chiefly in connection with the nuclear stalemate. If the nuclear stalemate cannot, in fact, be replaced by the abolition of nuclear weapons and is itself the least unreliable guarantee against general war that is available, it must be carefully considered what kinds and levels of armaments enable it to persist. It is clear that the system of deterrence requires that each side has a strategic-weapons system that is sufficiently effective to deter the other side. From this it follows that measures which reduced the strength of each side to a point below the level of sufficiency (for example, by bringing about a reduction of nuclear stockpiles to a point at which nuclear war was still possible, but nuclear deterrence was not), and undermined the nuclear stalemate without putting anything comparable in its place, would not be a contribution to the stability of the balance of power. There are, then, minimum levels of armaments necessary for the continuance of the nuclear stalemate. If it is the business of arms control to preserve and to buttress the balance of power, it cannot be shaped by any such principle as that of the indiscriminate reduction of armaments. Nor will it be concerned with arbitrarily interrupting the qualitative development of the arms race, with halting the process of qualitative change in weapons, without discriminating between those qualitative changes which enhance the stability of the balance of power and those which do not. It is not to be assumed that the further progress of any branch of the arms race is bound to lead to less, rather than to more, stability in the balance of power. At the present time, there are some branches of military development which would undoubtedly tend toward the undermining of the strategic nuclear balance: for example, the antimissile missile, civil defense, the attempt to develop forces capable of eliminating opposing retaliatory forces in a sudden attack (perhaps), the perfection of military reconnaissance to the point where the whereabouts of opposing strategic weapons can be known, even if they are hidden or mobile. On the other hand,

there are other military developments in train, whose tendency is to confirm or strengthen the strategic balance: for example, the attempt to make strategic weapons invulnerable to destruction in a surprise attack, and thus ensure the capacity to retaliate with them by making their bases fortified, dispersed, hidden, or mobile.

Thus it is possible to view the proper concern of arms control as the preservation and perfection of the strategic nuclear balance, rather than as the attempt to dismantle it while leaving the world without security against nuclear war. If this is the concern of arms control, it will not have as its object the maximum disarmament, the reduction of armaments to the smallest quantities and the most primitive kinds. It will be concerned with discriminating between those kinds or quantities of forces and weapons that promote the stability of the balance of power, and those which do not: to tolerate or even to promote the former, and to restrict the latter. The distinction between disarmament and rearmament, between more, or more advanced, armaments, and less, between interrupting the qualitative development of the arms race at a certain point, and allowing it to continue beyond that point is, in this view, of no interest to arms control. The measures it comprises will be selective as between what enhances the balance of power, especially the strategic nuclear stalemate, and what detracts from it, and will discriminate between disarmament and rearmament, and the varieties of each, respectively.

5. The New Language of Arms Control

By THE EDITORS OF BUSINESS WEEK

Concepts of military strategy and national defense have undergone a great change since the advent of the nuclear-missile age. With the new concepts has come a new vocabulary. To participate intelligently in the arms-control debate today, one must have some understanding of the technological and strategic terms that bear upon the subject. Among the several available glossaries on national security, the following one was selected because it is short and relatively nontechnical.

The brief working definitions below are not intended to be a complete dictionary of the "new language," nor do they claim to be authoritative or final. But they can serve as a modest introduction to the current vocabulary, and may assist the reader in understanding some of the other selections in this collection.

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NATIONAL SECURITY: Most people take this word for granted, but it needs definition. The concept of national security includes at least the following components: (1) ability to survive a war; (2) ability to prevent a war that would destroy the nation; (3) ability to withstand enemy pressures, threats, or attacks on allies; (4) ability to preserve national sovereignty and to obtain foreign-policy objectives.

To achieve national security today, a nation may employ some combination of three interrelated elements: arms, arms control, and . . .

DETERRENCE: Preventing hostile action by the threat of forcible retaliation. Here again, the idea is less simple than it sounds. First, what kinds of hostile action are you trying to deter? A common classification is: (1) direct nuclear attack; (2) extreme nuclear provocation (atom-bombing an ally); (3) extreme non-nuclear provocation (a Soviet troop invasion of Western Europe); (4) moderate provocation (the shelling of Quemoy).

Second, what kind of forcible retaliation do you threaten to use? You can rely on . . .

NUCLEAR WEAPONS: Any devices using the explosive power of the fission of uranium or plutonium (atom bombs) or the fusion

of hydrogen (H-bomb or thermonuclear bomb). These are available in a range of sizes roughly measured by comparison with tons of TNT. Small weapons for battlefield use, called "tactical," are equivalent to perhaps 5,000 tons (5 kilotons) of TNT* (World War II blockbusters had about 5 tons; Hiroshima was destroyed by a 20-kiloton bomb). Big bombs measure 5-million to 10-million tons of TNT—the "megaton" range. But there is no theoretical limit to the size.

CONVENTIONAL WEAPONS: These include all types of weapons used in World War II. Sometimes, tactical nuclear weapons are included among conventional weapons. Chemical and biological weapons (C/B) sometimes are, sometimes are not.

Discussions of deterrence also distinguish various ways to use, or threaten to use, nuclear weapons. There is the question of when to use them—whether as a . . .

FIRST STRIKE: This is the first nuclear attack of the war, whoever delivers it. It is the blow you can deliver before you have suffered any damage to your nuclear forces.

SECOND STRIKE: This is a blow delivered after you have received an enemy nuclear attack. You are limited to the weapons that have survived enemy attack—survived because they are in "hardened bases" that can withstand an enemy explosion, or because they are widely scattered or movable (as in submarines or railway cars).

There is also the question of what targets you aim at. You can use a . . .

COUNTERFORCE ATTACK: This is a blow aimed at the enemy's weapons systems. It is intended to prevent him from using his

* In view of published literature on tactical nuclear weapons this estimate seems high. The development of such weapons as low in yield as the equivalent of 100 tons of TNT (one tenth of a kiloton) has been reported in the American press. In his book *Nuclear Policy for War and Peace* (Cleveland: World Publishing Co., 1960), pp. 65–70, the late Thomas E. Murray, a former commissioner of the AEC, advocated the development of 250-ton (quarter kiloton) warheads, which "might conceivably be fired from something like a bazooka."—*Editor*.

weapons against you. It is expensive, because his weapons are likely to be well protected or hidden. You will have to use many bombs and bombs of multimegaton power.

COUNTERVALUE ATTACK: This is an attack against the enemy's cities and other valuable and vulnerable targets. It is intended to punish him, or the threat of it is intended to deter him. It is relatively cheap, because a few bombs can do enormous damage to populations and cities, although not necessarily to the enemy's scattered and mobile weapons systems. Countervalue attack is sometimes called "countereconomy," or "finite deterrence."

With different combinations of nuclear and other weapons and ways of using them, you can evolve many different strategies of deterrence, such as . . .

DEFENSIVE-RETALIATORY STRATEGY: You assume that you yourself will not deliver a first strike. You seek to deter an enemy from striking first by the threat of your second strike. The second strike you prepare to deliver might be either countervalue or counterforce.

OFFENSIVE-PRE-EMPTIVE STRATEGY: You deter attack by threatening to deliver a first strike if the enemy launches a conventional attack on you, or if he appears about to launch a nuclear attack. Yours would be a counterforce attack in order to limit the effectiveness of his retaliatory second strike.

STABLE MUTUAL DETERRENCE: You consider that your opponent's power is already so great, and likely to get so much greater, that, whether you strike first or second, you still can't keep your enemy from hurting your nation more than you are willing to endure. Your own power is also so great, or soon will be, that your enemy is in the same position. Both sides are therefore interested in stabilizing the deterrent situation. This may involve avoiding a continuation of "the arms race," which might upset "the balance of terror."

There's hot controversy over whether we and the Soviets presently have such a balance of terror. Those who doubt it say there is a . . .

MISSILE GAP: A Soviet lead—which, it is said, will be 3-to-1 by 1963—over the U.S. in numbers of intercontinental ballistic missiles (ICBM's).

Those who think the true balance has not shifted against the U.S. say that, whether or not there is a missile gap, the U.S. is not at the short end of any . . .

DESTRUCTION GAP: The total superiority of one nation over the other in nuclear striking power—including not only intercontinental missiles, but also intermediate-range ballistic missiles (IRBM's), manned bombers, nuclear submarines, aircraft carriers, fighter-bombers on forward bases, etc.

But if there's a balance, you want it to be stable rather than precarious; and stability will depend partly upon the number of weapons you have for deterrence. Thus . . .

VERY HIGH LEVELS of armament may be destabilizing, because they are more likely to be accident-prone.*

VERY LOW LEVELS of armament, some analysts hold, may also be destabilizing because a small amount of enemy cheating would give one nation the jump on an unwary and underarmed opponent.

Stability will also be related to the types of deterrent weapons you employ, such as . . .

PROVOCATIVE weapons are those that endanger you by frightening your enemy into the belief you are going to attack, and so goad him to attack. Counterforce weapons are often considered provocative (but not by counterforce advocates). Civil defense is regarded by some as provocative because it implies that you

* The level of arms is but one of several critical factors bearing on stability. The character of the weapons, their deployment and readiness, and the control arrangements and safeguards imposed by both sides are also highly significant factors. Under certain circumstances, therefore, a high level of armament might well be less accident-prone than a lower level.
—Editor.

are preparing to endure retaliation [and therefore contemplate a first strike].

PATIENT OR NERVOUS weapons: A weapon that must be launched quickly and irrevocably (such as a missile on its pad) upon receiving warning of attack is nervous. A weapon that can wait for confirmation or that can be recalled (an airborne bomber, for example) is patient. There is some controversy whether proposed orbital weapons, circling the earth ready for use, would be nervous or patient; most agree they would be provocative.

CREDIBLE AND COMMUNICABLE deterrents are ones the enemy knows you have and believes you would use if excessively provoked or attacked. Deterrence may thus be a useful way of preventing deliberate, planned surprise attacks.

But deterrence may not be able to stop all kinds of wars, such as . . .

ACCIDENTAL WARS: Wars triggered by false alarms (such as a shower of meteorites), unauthorized or irrational human behavior (a crazy pilot or general), defective equipment (a falling switch) . . . or . . .

ESCALATION: The process by which wars start small and limited, but grow bigger and bigger.

CATALYTIC WAR: A vengeful or ambitious or desperate smaller power might provoke war between two great powers so that they will wipe each other out (the catalyst might take the form of nuclear bombs smuggled into the great power's harbor and exploded).

Most experts agree that the danger of wars by accident, miscalculation, escalation, or catalysis will grow as nuclear weapons spread to many nations. This is the . . .

NTH-COUNTRY PROBLEM: Country 1 (U.S.), 2 (U.S.S.R.), 3 (U.K.), 4 (France). . . . N (almost any country with some industrial skill).

Therefore, to add stability to your system, you will need not only deterrence but . . .

ARMS CONTROL: Cooperation with potential enemies to establish kinds and quantities of weapons intended to make wars less likely. The cooperation can also involve control over the development, deployment, and use of weapons—whether in periods of peace, tension, or actual hot war.

The cooperation may be by . . .

TACIT OR FORMAL AGREEMENT: As opposed to a formal treaty, a tacit agreement is an unspoken understanding in which both sides take voluntary measures in the expectation that the other side will do the same. The moratorium on nuclear testing is an example.

Arms-control planning lays great stress on . . .

INSPECTION: Checking up on your enemy to make sure he is not planning something dirty—and submitting, correspondingly, to his inspection. Among ways of doing this are . . .

TECHNICAL INSPECTION: This involves the use of elaborate apparatus—on the ground, under the sea, in the air, or in outer space—for reconnaissance and surveillance of illegal activities and for seeing or sensing sound, light, heat, radio waves, radioactivity, etc.

CONVENTIONAL INSPECTION: Teams of inspectors who patrol factories, harbors, airports, missile bases, laboratories, atomic-energy plants, stockpiles.

ESPIONAGE-TYPE INSPECTION: This involves use of human agents, legally or semilegally, to keep an eye on what the other country is up to.

RECORDS INSPECTION: Detailed examination and analysis of pieces of paper—such as budget and expenditure data, production and inventory records. Normal national intelligence activity today involves a great deal of this.

Since inspection may not be perfect, and an accidental bomb or a catalytic bomb without a return address on it may arrive, arms control requires . . .

COMMUNICATION between the parties to the arms-control agreement, to verify whether or not the agreement has been broken.

To add extra stability, some advocates of arms control would use . . .

HOSTAGES: This form of security was practiced by mistrustful despots in earlier times. Some consider that mutual deterrence makes each nation the hostage of the other. There are many trick versions of the hostage idea.

Some favor less reliance on hostages, physical deterrence, and inspection systems, more on political means including . . .

INTERNATIONAL LAW—which today exists only in a rather rudimentary form.

DIPLOMACY, CULTURAL EXCHANGES, and other social techniques aimed at increasing understanding, reducing hostility.

Many believe the ultimate aim of arms control is . . .

DISARMAMENT: The particular form of arms control that aims specifically at reduction or elimination of weapons. However, the word is still avoided in some circles in favor of discussion of what handling of armament contributes most to a stable international situation.

6. America's Basic Defense and Arms-Control Policies

By JOHN F. KENNEDY

Upon taking office in 1961, President Kennedy launched an intense review of U. S. national-security policies. One major purpose of this review was to find more effective ways to reduce the dangers of nuclear war through arms-control measures. His special defense-budget message to the Congress on March 28, 1961, reflects his determination "to take every step to lessen tensions, to obtain peaceful solutions, and to secure arms limitations."

The recommendations of the message were based upon eight fundamental policy decisions, which the President set forth in his introductory statement. In this preamble, reproduced below, he emphasizes the primacy of deterrence and the importance of both flexibility and effective civilian control in the operation of military forces. He deals with the problems of miscalculation and unconventional war. The United States, he says, will never "strike the first blow in any attack." He points out that well-conceived defense expenditures are "wholly consistent with our earnest desire for serious conversation with the other side on disarmament."

1. *The primary purpose of our arms is peace, not war*—to make certain that they will never have to be used—to deter all wars, general or limited, nuclear or conventional, large or small—to convince all potential aggressors that any attack would be futile—to provide backing for diplomatic settlement of disputes—to insure the adequacy of our bargaining power for an end to the arms race. The basic problems facing the world today are not susceptible to a military solution. Neither our strategy nor our psychology as a nation—and certainly not our economy—must become dependent upon the permanent maintenance of a large military establishment. Our military posture must be sufficiently flexible and under control to be consistent with our efforts to explore all possibilities and to take every step to lessen tensions, to obtain peaceful solutions, and to secure arms limitations. Diplomacy and defense are no longer distinct alternatives, one to be used where the other fails—both must complement each other.

Disarmament, so difficult and so urgent, has been much discussed since 1945, but progress has not been made. Recrimination in such matters is seldom useful, and we for our part are determined to try again. In so doing, we note that, in the public position of both sides in recent years, the determination to be strong has been coupled with announced willingness to negotiate.

For our part, we know there can be dialectical truth in such a position, and we shall do all we can to prove it in action. This budget is wholly consistent with our earnest desire for serious conversation with the other side on disarmament. If genuine progress is made, then as tension is reduced, so will be our arms.

2. *Our arms will never be used to strike the first blow in any attack.* This is not a confession of weakness but a statement of strength. It is our national tradition. We must offset whatever advantage this may appear to hand an aggressor by so increasing the capability of our forces to respond swiftly and effectively to any aggressive move as to convince any would-be aggressor that such a movement would be too futile and costly to undertake. In the area of general war, this doctrine means that such capability must rest with that portion of our forces which would survive the initial attack. We are not creating forces for a first strike against any other nation. We shall never threaten, provoke, or initiate aggression—but if aggression should come, our response will be swift and effective.

3. *Our arms must be adequate to meet our commitments and insure our security, without being bound by arbitrary budget ceilings.* This nation can afford to be strong—it cannot afford to be weak. We shall do what is needed to make and to keep us strong. We must, of course, take advantage of every opportunity to reduce military outlays as a result of scientific or managerial progress, new strategic concepts, a more efficient, manageable, and thus more effective defense establishment, or international agreements for the control and limitation of arms. But we must not shrink from additional costs where they are necessary. The additional \$650 million in expenditures for fiscal 1962, which I am recommending today, while relatively small, are too urgent to be governed by a budget largely decided before our defense review had been completed. Indeed, in the long run the net effect of all the changes I am recommending will be to provide a more economical budget. But I cannot promise that in later years we need not be prepared to spend still more for what is

indispensable. Much depends on the course followed by other nations. As a proportion of gross national product, as a share of our total budget, and in comparison with our national effort in earlier times of war, this increase in defense expenditures is still substantially below what our citizens have been willing and are now able to support as insurance on their security—insurance we hope is never needed—but insurance we must nevertheless purchase.

4. *Our arms must be subject to ultimate civilian control and command at all times, in war as well as peace.* The basic decisions on our participation in any conflict and our response to any threat—including all decisions relating to the use of nuclear weapons, or the escalation of a small war into a large one—will be made by the regularly constituted civilian authorities. This requires effective and protected organization, procedures, facilities, and communication in the event of attack directed toward this objective, as well as defensive measures designed to insure thoughtful and selective decisions by the civilian authorities. This message and budget also reflect that basic principle. The Secretary of Defense and I have had the earnest counsel of our senior military advisers and many others—and in fact they support the great majority of the decisions reflected in this budget. But I have not delegated to anyone else the responsibilities for decision which are imposed upon me by the Constitution.

5. *Our strategic arms and defenses must be adequate to deter any deliberate nuclear attack on the United States or our allies—*by making clear to any potential aggressor that sufficient retaliatory forces will be able to survive a first strike and penetrate his defenses in order to inflict unacceptable losses upon him. As I indicated in an address to the Senate some thirty-one months ago, this deterrence does not depend upon a simple comparison of missiles on hand before an attack. It has been publicly acknowledged for several years that this nation has not led the world in missile strength. Moreover, we will not strike first in any conflict. But what we have and must continue to have is

the ability to survive a first blow and respond with devastating power. This deterrent power depends not only on the number of our missiles and bombers, but on their state of readiness, their ability to survive attack, and the flexibility and sureness with which we can control them to achieve our national purpose and strategic objectives.

6. *The strength and deployment of our forces in combination with those of our allies should be sufficiently powerful and mobile to prevent the steady erosion of the free world through limited wars; and it is this role that should constitute the primary mission of our overseas forces.* Non-nuclear wars, and sublimited or guerrilla warfare, have, since 1945, constituted the most active and constant threat to free world security. Those units of our forces which are stationed overseas, or designed to fight overseas, can be most usefully oriented toward deterring or confining those conflicts which do not justify and must not lead to a general nuclear attack. In the event of a major aggression that could not be repulsed by conventional forces, we must be prepared to take whatever action with whatever weapons are appropriate. But our objective now is to increase our ability to confine our response to non-nuclear weapons, and to lessen the incentive for any limited aggression by making clear what our response will accomplish. In most areas of the world, the main burden of local defense against overt attack, subversion, and guerrilla warfare must rest on local populations and forces. But given the great likelihood and seriousness of this threat, we must be prepared to make a substantial contribution in the form of strong, highly mobile forces trained in this type of warfare, some of which must be deployed in forward areas, with a substantial airlift and sealift capacity and prestocked overseas bases.

7. *Our defense posture must be both flexible and determined.* Any potential aggressor contemplating an attack on any part of the Free World with any kind of weapons, conventional or nuclear, must know that our response will be suitable, selective, swift, and effective. While he may be uncertain of its exact

nature and location, there must be no uncertainty about our determination and capacity to take whatever steps are necessary to meet our obligations. We must be able to make deliberate choices in weapons and strategy, shift the tempo of our production and alter the direction of our forces to meet rapidly changing conditions or objectives at very short notice and under any circumstances. Our weapon systems must be usable in a manner permitting deliberation and discrimination as to timing, scope, and targets in response to civilian authority; and our defenses must be secure against prolonged reattack as well as a surprise first strike. To purchase productive capacity and to initiate development programs that may never need to be used—as this budget proposes—adopts an insurance policy of buying alternative future options.

8. *Our defense posture must be designed to reduce the danger of irrational or unpremeditated general war*—the danger of an unnecessary escalation of a small war into a large one, or of miscalculation or misinterpretation of an incident or enemy intention. Our diplomatic efforts to reach agreements on the prevention of surprise attack, an end to the spread of nuclear weapons—indeed all our efforts to end the arms race—are aimed at this objective. We shall strive for improved communication among all nations, to make clear our own intentions and resolution, and to prevent any nation from underestimating the response of any other, as has too often happened in the past. In addition, our own military activities must be safeguarded against the possibility of inadvertent triggering incidents. But even more importantly, we must make certain that our retaliatory power does not rest on decisions made in ambiguous circumstances, or permit a catastrophic mistake.

7. War, Coexistence, and Disarmament

By NIKITA S. KHRUSHCHEV

Premier Khrushchev's famous speech of January 6, 1961, provides the most comprehensive recent statement of his views on defense, disarmament, and coexistence. This speech was an extended commentary on the manifesto issued after the meeting of the Communist leaders from eighty-one countries held in Moscow in November, 1960.

In his speech, Mr. Khrushchev declared that the prevention of "a nuclear holocaust is the great and vital issue facing mankind." International war, he said, is not needed for the victory of Communism throughout the world. He condemned war in general terms, but at the same time he supported particular kinds of wars he believes will advance Communist goals and interests. Although a general nuclear war would be horrible, he maintained it would hurt the enemies of Communism more than it would the Communists. War would postpone, but it would not prevent the inevitable triumph of Communism. Efforts to prevent such a war will strengthen the forces of peace (Communism) and weaken the forces of imperialism, by which he means the Western alliance.

One major way to prevent nuclear war is to adopt the Communist disarmament proposals, which, he said, would reduce the "war potential" of the imperialists. He urged all Communists everywhere to exploit the people's fear of war

and to use the pacifist sentiment of both the naïve and “saner representatives of the bourgeoisie.” He defined coexistence as a situation where there are minimum barriers to Communist expansion.

Wars of liberation, such as those in Vietnam, Cuba, and Algeria, said Khrushchev, are “sacred” wars against imperialism. “We have helped and shall continue to help peoples fighting for their freedom. . . . The Communists support just wars of this kind wholeheartedly and without reservations.”

The following paragraphs are taken from the section of the speech devoted to “war and peace.”

“For New Victories for the World Communist Movement,” *The World Marxist Review: Problems of Peace and Socialism* (Toronto), January, 1961, pp. 13–19. Reprinted with the permission of the publisher.

IN the present conditions, we must distinguish the following kinds of war: world wars, local wars, and wars of liberation or popular uprisings. This is necessary in order to work out correct tactics in regard to each.

Let us begin with the problem of world wars. The Communists are the most resolute opponents of world wars, as they are of wars between countries in general. Only the imperialists need these wars in order to seize foreign territories and to enslave and plunder the peoples.

In the conditions of today, the likelihood is that there will not be wars between the capitalist, imperialist countries, although this eventuality cannot be ruled out. The imperialists are preparing war chiefly against the socialist countries, above all against the Soviet Union, the most powerful of the socialist countries. They would like to sap our might and by so doing restore the one-time rule of monopoly capital.

The working class, which today rules over a vast area of the world and in time will rule over all the world, cannot allow the forces doomed by history to bring down hundreds of millions into the grave with them. For a world war in the conditions of today would be waged with missiles and nuclear weapons, that is, it would be the most destructive war in all history.

We know that if the imperialist madmen were to begin a world war, the peoples would wipe out capitalism. But we are resolutely opposed to war, because we are concerned for the destinies of mankind, its present and its future. We know that the first to suffer in the event of war would be the working people and their vanguard—the working class.

. . . The victory of socialism on a world scale by virtue of the laws of history is no longer far off. War between countries is not needed for this victory.

. . . It is necessary, therefore, to warn the masses about the deadly consequences of a new world war and arouse their righteous wrath against those who are plotting this crime. The possibility of averting war is not a gift from heaven. Peace cannot be had by request. It can be secured only by an active, purposeful struggle. That is why we have been waging this struggle, and will continue to do so.

The entire foreign policy of the Soviet Union is aimed at strengthening peace. We have used and will continue to use the growing might of our country, not to threaten anyone, not to arouse warlike passions, but in order to pursue a steadfast policy of combating the war danger and averting world war.

Coexistence Helps Communism and Hurts Capitalism

We have always held that we stand for friendly relations with all peoples for the benefit of peace, in keeping with the principles of peaceful coexistence.

Consistent implementation of the policy of peaceful coexistence strengthens the positions of the world socialist system, furthers the growth of its economic might, international prestige, and influence, and provides favorable opportunities for it in the peaceful competition with capitalism.

The policy of peaceful coexistence promotes the growth of the forces of progress, of the forces fighting for socialism; in the capitalist countries it facilitates the work of the Communist parties and the other progressive organizations of the working class, makes it easier for the peoples to combat the aggressive war blocs and foreign military bases, and contributes to the success of the national-liberation movement.

The struggle against imperialism can succeed only if its aggressive actions are firmly resisted. Scolding will not halt the imperialist adventures. There is only one way in which they can be curbed: steady strengthening of the economic, political, and military power of the socialist countries; vigorous consolidation and reinforcement of the world revolutionary movement; mobilization of the people for the struggle to avert war.

The Central Committee of the Party and the Soviet Government will continue to do everything to increase the military might of our country, since the imperialists are continuing the arms drive.

Disarmament Is an Effective Weapon Against Imperialism

Comrades, if prevention of a new war is the question of questions, then disarmament is the best way to do it. The meeting of representatives of the Marxist-Leninist parties declared that the realization of the Soviet program for general and complete disarmament would be an act of historic importance.

Our struggle for disarmament is not a tactical move. We sincerely want disarmament. . . .

The struggle for disarmament is a most important factor for the prevention of war. It is an effective factor in the fight against imperialism. In this fight the socialist camp has most of mankind on its side.

When we call for a world without arms and without wars, we take into account, of course, that in the conditions of today, with two differing world social systems, there are forces in the imperialist camp, and fairly strong forces at that, who not only refuse to support this call, but who are waging a struggle against it.

The question of the struggle for Communism is a class question. In the case of the struggle for peace, this is a question the solution of which can unite not only the working class, the peasantry, and the petty bourgeoisie, but also that part of the bourgeoisie which sees the real danger of a thermonuclear war.

Consequently, the slogan of the fight for peace by no means contradicts the slogan of the fight for Communism. The two go hand in hand, for in the eyes of the masses, Communism appears as a force capable of saving mankind from the horrors of a missile-nuclear war, whereas imperialism is, increasingly, associated with war as a system engendering wars. That is why the slogan of the fight for peace is, as it were, a satellite of the slogan of the fight for Communism.

As correctly pointed out in the statement, "The peace movement is the broadest movement of our time, involving people of diverse political and religious creeds, of diverse classes of society, who are all united by the noble urge to prevent new wars and to secure enduring peace." People of different social strata, different political views, and different religious beliefs are represented among the peace supporters.

The fight for disarmament is an active fight against imperialism, for narrowing its war potential. The peoples must do everything to achieve the prohibition and destruction of nuclear weapons and all other weapons of wholesale annihilation. Peace will then be ensured and the peoples will be able to arrange their lives in keeping with their wishes and interests.

A primary condition for progress in disarmament is the mobi-

lization of the people, their growing pressure on the imperialist governments.

Two trends can be observed in the policy of the capitalist camp in relation to the socialist countries—one bellicose and aggressive, the other moderate and sober. Lenin pointed to the need of establishing contacts with those circles of the bourgeoisie which gravitate towards pacifism, “be it even of the palest hue.” In the struggle for peace, he said, we should not overlook also the saner representatives of the bourgeoisie.

The socialist countries take both of these trends into account in their policy. They work for negotiations and agreements with the capitalist countries on the basis of constructive proposals and promote personal contact between statesmen of the socialist and capitalist countries. Every opportunity should be used as before to expose the Cold War men, those who want to keep up the arms drive, and to convince the masses that the socialist countries really mean what they say in working to safeguard world peace.

The fact that Communism is the standard-bearer of peace is one of the main sources of its moral power, of its tremendous influence over the masses. The banner of peace enables us to rally the masses round us. By holding aloft this banner we will be even more successful.

The Communists consider it their sacred duty to make full use of all the available opportunities to bridle the warlike forces of imperialism and prevent a new war.

The international Communist and working-class movement has become so powerful and so well organized that it is now setting itself the task of saving mankind from the ordeal of another war. The statement of the meeting says:

“The Communists regard it as their historical mission not only to abolish exploitation and poverty on a world scale and

rule out for all time the possibility of any kind of war in the life of human society, but also to deliver mankind from the nightmare of a new world war already in our time. The Communist parties will devote all their strength and energy to this great historical mission."

8. The American Approach to Disarmament

By RICHARD J. BARNET

The author of this selection has made a critical study of the disarmament negotiations between the United States and the Soviet Union from 1945 to 1960. In this essay, the first of two by Mr. Barnet in this collection, he draws some conclusions about the official American position as it has developed since the end of World War II. In the selection that follows this one, he appraises the Soviet attitude toward disarmament. He calls the past Soviet-American negotiations a "parallel monologue" characterized by "intransigence on both sides," but he is hopeful that future discussion will be carried on more honestly and responsibly.

Mr. Barnet uses the word "disarmament" to mean a substantially lowered level of arms and the term "arms control" to mean the regulation or limitation of arms at approximately the present levels. Accepting his definitions, there could be an "arms-control" treaty that, in its later stages, calls for a substantial reduction in the level of arms. If such a treaty were in effect and observed by both sides, arms control would become disarmament.

"The Disarmament Challenge," *Who Wants Disarmament?* (Boston: Beacon Press, 1960), pp. 45-55. Reprinted with the permission of the author and the publisher.

WHAT conclusions can we draw from the fifteen-year history of American disarmament efforts? Are those who must guide our policy for the future condemned to repeat the past?

The pattern of confusion in United States disarmament policy suggests the urgency of setting our national objectives in this area. We must make up our mind whether disarmament under *any* conceivable circumstances could be a practical or desirable goal for the United States. Do we want disarmament? In an ideal world, it is hard to imagine a negative answer. In the real world, the question is obviously far too simple for any quick answer. But there is one question that can, indeed must, be answered before any progress can be made on this issue: Under what conditions would we want disarmament?

Curiously enough, when we presented the Baruch proposals in 1946, we gave relatively little thought to the kind of world in which they could represent a practical and acceptable policy. Because they failed to take the real world into account, the proposals were doomed from the start.

In the period of the parallel monologue, intransigence on both sides of the table relieved the American government from the responsibility of formulating a basic disarmament policy. As long as East and West disagreed on such threshold issues as the nature of inspection machinery and the disarmament timetable,

continued deadlock was assured. It was only when increasing Soviet flexibility made possible the achievement of wide areas of agreement on such technical questions that the United States felt challenged to examine the basic premises of its disarmament stand.

The Paradox of Nuclear Weapons

Self-examination led to dilemma. There were two stubborn facts of the nuclear age which could not be reconciled and which seemed to preclude effective disarmament. First, the principal stimulus to the arms race and the chief source of concern around the world were the nuclear stockpiles. Compared to these, even massive armies seemed of secondary importance. Atomic weapons struck terror in the hearts of all who dared to think about them, not only because their destructive potential was incomparably greater than any weapon of the past, so that they posed a real threat of human extinction, but also because their overwhelming effectiveness in a surprise attack seemed to offer an aggressor an irresistible temptation.

The second stubborn fact was in a sense the antithesis of the first. Besides holding out the greatest threat of war, the bombs represented the best hope of maintaining peace. The world into which the atomic bomb was born could not, it was felt, be held together by any force more rational than fear of mutual destruction. Deterrence through threat of nuclear retaliation was recognized and is still recognized as a fixture of American policy. The combination of the first fact—that nuclear bombs are the weapons principally responsible for the danger of the arms race—and the second fact—that abandonment of nuclear deterrence is an unreasonable risk for the United States—leads to the conclusion that atomic disarmament is suicidal and nonatomic disarmament relatively insignificant. Once the decision is made to retain a substantial number of nuclear bombs, the tensions generated by armaments are not likely to subside significantly. To the extent that weapons are kept in

sufficient quantities to mount an attack as insurance against violations, the disarmament agreement is unlikely to accomplish its mission. A nation that holds in reserve the capacity to retaliate also retains the capacity to attack. To a potential victim, a power armed for defense and a power armed for attack appear identical. The difference between the two is purely a matter of national intention. The formulation of intention, especially in a totalitarian state, is a highly secret process. Perhaps both sides may have only defensive motives for retaining a nuclear capacity. Nevertheless, where rival states hedge against each other's perfidy by retaining retaliatory weapons, it is plain that the arms race will go on. Aware that its rival possesses weapons which could be used either for defense or for a devastating attack, neither state will feel safe until it is convinced that its margin of superiority is sufficient to discourage an attack.

Disarmament and deterrence are particularly difficult to reconcile in dealing with atomic weapons. In a period when weapons development is reasonably static, it may be possible for rival powers to achieve a degree of parity and at that point call a halt to the race. The limited agreements on agreed ratios of naval strength adopted at the 1922 Washington Conference on Naval Arms Limitation were possible only because the signatory nations believed they could accurately assess the relative power of the weapons at their command. Most nuclear weapons, and particularly the delivery systems needed for their use, however, have yet to be tested under actual battle conditions. It is impossible to know how many bombers an ICBM is worth or to gauge the relative impact of a submarine-based missile. When a high-altitude United States U-2 reconnaissance plane successfully penetrated over a thousand miles of heavily defended Soviet territory before being shot down, previous estimates on the effectiveness of manned aircraft in evading anti-aircraft defense were probably revised in many capitals, including Moscow. The instability of the armaments competition not only makes a policy of deterrence more hazardous, but it reduces

the incentive to disarm in the very areas where arms reduction might reduce tension. In an atmosphere of uncertainty, the tendency will be to disarm only in the areas of superfluous or inefficient weapons, as both the United States and Russia have done unilaterally, and to maintain as large a lead as possible in the armaments that count.

Faced with the paradox that atomic weapons were both the chief stimulus of war and the chief deterrent to war, American policy-makers turned to the idea sometimes known as "arms control." Many different measures with different purposes were described by this term, but they all had one thing in common: The nuclear stockpiles were to be left substantially intact. It was often claimed that these measures would "build confidence" that would lead eventually to nuclear disarmament, but it was never explained exactly how this development would come about. Measures of partial disarmament as ends in themselves (as opposed to separate stages of an integrated program leading to complete nuclear disarmament) avoid the dilemma of the two stubborn facts of the atomic age, but they do not help solve it.

Thus, the only approach which is likely to reduce materially the fear of war is one that involves the substantial elimination of nuclear weapons from national arsenals. But today, the elimination of our nuclear strength appears almost unthinkable in view of the high state of tension in the world, which we believe is caused primarily by the Soviet challenge. For propaganda reasons of our own, we are unwilling to state, despite Russian urging, that the United States is "not interested" in complete nuclear disarmament. On occasions we still declare it to be a goal of American policy. And yet, at the conference table we have stated frankly that nuclear disarmament in the present world is out of the question. Conflicting statements of high officials have added to the confusion. In May, 1957, Admiral Radford, then Chairman of the Joint Chiefs of Staff, expressed the opinion that "We cannot trust the Russians on

this [disarmament] or anything. . . ." President Eisenhower promptly dissociated himself from this view, remarking "there has got to be progress in some kind of disarmament."

Little Enthusiasm for Disarmament

Today, however, there is little enthusiasm for the idea of disarmament in Washington. The Pentagon and the Atomic Energy Commission, whose responsibility is defense through military might, wield a decisive influence on our disarmament policy. Reliance on military strength has become a habit, a military-dominated economy part of our way of life. In 1956, 15 per cent of the U.S. labor force was estimated to be at work on military orders. As much as 50 per cent of our scientific and engineering research is reportedly related, directly or indirectly, to the arms race.

If there is no way we can avoid all this in the world as it is, what changes would we require before we could substitute a policy of disarmament for our policy of deterrence? In the short-lived era of the Baruch Plan, we indicated that the only prerequisite to disarmament was the establishment of policing machinery that would meet our specifications. In 1955 and 1956, however, after substantial agreement on disarmament machinery had been achieved, the United States came to the conclusion that no system of inspection or control, no matter how perfect, could in itself deter a treacherous attack with atomic weapons. As the arms race has continued, the opportunities for diverting hidden atomic stocks, building secret processing plants, or making other preparations for a future violation of a disarmament agreement have multiplied many times. The improvement in detection equipment has not kept pace with the increased possibilities of deception. Thus, while a comprehensive system of inspection can reduce the risk of evasion, it cannot by itself eliminate it. Since this is true, even complete agreement from the Soviets on every aspect of inspection would not warrant the

abandonment by the United States of its nuclear deterrent, if we reasonably believe the Russians would violate a disarmament agreement whenever they could do so with impunity.

If improvement in inspection machinery would not in itself justify nuclear disarmament, what about changes in Soviet policy? Certainly Soviet policy has been responsible for our major rearmament effort. Is it possible that Soviet policy might change ultimately, so as to permit substantial disarmament?

Fear of Soviet Intentions

Despite occasional theoretical talk of the need for armaments in order to maintain stability, even in a world free of immediate crisis, American reluctance to disarm has not been primarily due to any abstract faith in military power, for our traditions run in another direction. Rather our dependence on arms can be traced directly to a concrete fear of Soviet intentions. From about 1948 on, it has been the basic thinking of the Pentagon and State Department that the Soviet Union would attack the United States if it ever became profitable to do so. High-ranking military leaders and authorities on Soviet policy have continually presented this pessimistic view to Congress. No less an authority than Winston Churchill has credited the American atomic bomb with the salvation of Europe from the Russian hordes. We have viewed every increase in Soviet power as a military challenge and have assumed for almost fifteen years that it is only our massive retaliatory power that deters the Russians from a deadly attack.

It is true that since the development of the hydrogen bomb on both sides and the shift in Soviet diplomacy to increased flexibility and subtlety, the conviction has grown that the struggle between the United States and Russia will be fought by means other than total atomic war. Despite the recognition American planning has given to certain changes in military technology and Soviet tactics, the assumption that the Soviets under the right

conditions would not hesitate to use force against us has never been revised. Presumably the "right" conditions would be that the Soviet Union would be relatively safe from a crushing retaliatory blow and that no less risky means of accomplishing its political objectives were available. Thus, we spend each year over half our budget on defense, because we believe the Soviets have never given up their intention to bury us. If one could sum up the current view, it is that they wish us a natural death if possible, but are quite willing to help if necessary.

This assumption about Soviet policy precludes any agreement for disarmament that would involve a significant reduction of deterrent power. It is one thing to accept a system of inspection and control known to be inadequate where the attitude of the potential violators (and every nation of course qualifies as that) is at worst ambiguous. It is quite another when you are convinced that one of the signatories of the disarmament treaty has a fixed intention to destroy you whenever he gets the chance, for an imperfect treaty faithfully observed on one side and deliberately evaded on the other offers precisely such an opportunity. To enter into a disarmament agreement dependent to any degree on "good faith" with a nation of messianic ideas, implacable hostilities, and a deeply rooted belief that its ultimate survival depends upon the destruction of all its rivals is more than a reasonable risk. It is an invitation to disaster.

If the above description accurately fits the present-day Soviet Union, it would be clearly dangerous to conclude any disarmament agreement with the Soviets that would involve a substantial reduction of our military power. Where would such a decision leave us?

The obvious result of such a decision would be a continuation and an inevitable acceleration of the arms race. With this development would come a high risk of catastrophe, for intensive rivalries in arms have usually led to disaster. The likelihood of an intensification of the arms race is great because the forces of inertia would impel us in that direction. After fifteen years

of cold war, a "redoubled defense effort" is the typical response to political crises. While this course may actually be the most dangerous one of all, to those who have the responsibility of decision it may look considerably safer than disarmament in a hostile world.

It has been pointed out, however, that the balance of terror may be less stable than we had thought. As the burden of the arms race grows, the desire to end it by striking a preventive blow may increase. A sudden and overwhelming technical breakthrough might give the Russians the confidence to make the attempt. The theoretical justification for such a move has already been developed. A Soviet marshal, writing in an official military journal, has declared that under certain circumstances a "pre-emptive attack" against an enemy who is preparing to launch a surprise attack is justified.

An alternative approach would be to concentrate on the factors in the world that make us reluctant to disarm and consider under what conditions those factors might change. In other words, if it is a fear of Soviet intentions that is the real source of our objection to disarmament, should we not consider what changes in Soviet goals and Soviet techniques are necessary before disarmament could become a rational step for us to undertake—and what changes are possible? What changes in political behavior would we insist upon? In short, what would the Soviet Union have to become before we would accept their word on a disarmament agreement? Once we have decided upon the minimum conditions of security that would justify the leap in the dark that disarmament inevitably represents, we should re-examine Soviet goals to see whether these conditions are possible. And since the Chinese Communists are also likely to develop atomic weapons before long, it will be necessary to consider under what circumstances it would be reasonably safe to rely on their good faith as well. And then the most difficult question of all: What changes in our own policy would we or could we make to induce hopeful changes on the Communist side?

Is the Arms Race Only a Symptom?

Merely to pose the questions suggests the extraordinary difficulty in arriving at answers. Yet, the questions cannot be avoided without capitulating altogether to the arms race. Nor are these questions likely to be any more soluble in the future. At the conference table, the United States has frequently advanced the argument that progress on disarmament should wait upon the solution of existing political disputes, that efforts should be concentrated first on settling the specific controversies dividing the atomic powers and only thereafter on disarmament. It is often said that the arms race is but a symptom of national rivalries, and that if the rivalries are called off, dependence on arms will automatically decline. Others have replied that in an atmosphere poisoned by the deadly competition in armaments the solution of political differences is impossible, for each side feels too insecure to make the minimum concessions necessary for successful negotiation.

The solve-the-political-problems-first approach has been used to justify a cautious policy toward disarmament. The advocates of this approach do not say that disarmament is impossible, but only that it is impossible now. Is there any basis for confidence that the prospects for disarmament will improve with the resolution of specific controversies? Are the specific points of conflict around the globe where American and Soviet power contend the real source of the tension that has led to the arms race? Or, put differently, if all the particular political crises of major importance were resolved, would the Soviet-American rivalry end?

If Russia were a typical imperialist power, one might confidently give an affirmative answer. For example, the disputes of the colonial powers before World War I involved limited objectives, and national survival was seldom at stake. But the situation is quite different today. The differences between Russia and the United States are not causes but manifestations of a deeper rivalry. Neither side needs nor wants for its own use any real estate now in issue. Neither side is primarily interested

in securing economic advantages outside its borders at the expense of the other. Commercial rivalry is not a major source of contention. What divides the two superpowers is the very question of coexistence: Can a dynamic state with a revolutionary ideology and apparently unlimited ambition live side by side with an equally powerful state that resists its encroachments? The specific issues dividing the Communist and non-Communist world in 1960 are not the same as in 1946. Iran, Greece, Korea, and Indochina are quiescent. Berlin and Formosa have taken their place. As Mao Tse-tung describes it, Communist strategy is one of "protracted war." The pressure points change, but the conflict continues. If the Chinese leader has accurately described the character of the struggle between the two worlds, then it is clear that the liquidation of particular controversies is not an occasion for disarming.

A review of a few events of the postwar period tends to confirm this thesis. The signing of the Austrian State Treaty in 1955 was a "liquidation," as the Russians call it, of one of the political controversies arising out of World War II, but it did not significantly reduce tensions or increase the willingness of the United States to disarm. Nor have Soviet unilateral moves such as the reduction of its forces, the banning of tests, or the relinquishment of the Finnish naval base at Porkkala inspired any appreciable confidence in the West. We have considered them merely tactical shifts portending no change in fundamental policy. John Foster Dulles used to ask the Soviets for "deeds, not words," and recently Khrushchev has flung the same challenge at us. But it is quite clear that neither side will be impressed with any deeds short of major concessions, and these neither the Soviets nor ourselves are likely to give merely as good-will gestures. Thus, it does not seem promising to postpone active efforts for disarmament until the "negotiating atmosphere" improves, for such a course is likely to involve a longer wait than the world can afford.

Moreover, it is entirely possible that the disarmament issue is

actually more soluble than the political issues themselves. It is more difficult to imagine reconciling United States and Soviet interests on the status of Berlin, for example, than on those aspects of disarmament where the interests of the two powers may coincide. Avoidance of nuclear devastation is probably the strongest common purpose uniting the Communist and non-Communist world. The possibility that the Kremlin might decide to risk the adventure of atomic war cannot be discounted, but from the Soviet point of view a nuclear contest seems an irrational means of expanding its power in view of the available alternatives.

9. The Soviet Attitude on Disarmament

By RICHARD J. BARNET

In spite of, or perhaps because of, the torrent of words from the Soviet Union calling for "general and complete disarmament," the basic Soviet attitude on this problem is very difficult to discern. During the fifteen years of disarmament negotiations, the Communists have insisted that all Western inspection proposals were devices for espionage on Russian territory. Mr. Khrushchev has said, however, that the U.S.S.R. will accept fully any Western inspection scheme after disarmament is an accomplished fact.

The Soviets have likewise objected to Western proposals to stabilize arms at approximately present levels in the interests of mutual deterrence, even though Western spokesmen have insisted that this is a necessary prerequisite to actual arms reduction. In attempting to understand the Soviet attitude, Mr. Barnett believes the basic question to be: "Is it in the Soviet interest to negotiate some form of disarmament?" (In connection with this essay, the reader is referred to the statement of Mr. Khrushchev on pp. 69-74.

"The Soviet Attitude on Disarmament," *Problems of Communism*, May-June, 1961, pp. 32-37. Reprinted with the permission of the author and the publisher.

THE fifteen-year disarmament dialogue between the United States and the Soviet Union has been resumed, once again focusing attention on the question, "Do the Soviets want disarmament?" Soviet propaganda offers a clearly affirmative answer. Soviet diplomatic behavior provides more ambiguous clues. Soviet ideology, even after Khrushchev's softening of the militant Leninist line, suggests even less grounds for optimism.

The question is too important, however, to be decided on the basis of such evidence alone. It is true that Soviet propagandists have capitalized, and continue to capitalize, on the disarmament issue; that the use, and more particularly the threat, of force have been fixtures of Soviet diplomacy; and that there are deep inconsistencies between the spirit of Communist ideology, with its emphasis on the inevitability of struggle and its pragmatic view of violence, and the concept of negotiated disarmament. Yet, in assessing current Soviet attitudes on disarmament, it is necessary both to face these disagreeable facts and at the same time to look beyond them. The question to consider is not so much "Do the Soviets want disarmament?"—as if it were primarily a matter of moral choice—but rather, "Is it in the Soviet interest to negotiate some form of disarmament?" And in posing the question we should be fairly concrete, for what we mean by "disarmament" may well determine the answer. Obviously,

a scheme that would result in the disarmament of the West but leave the Soviet Union with the option of either pursuing the peaceful path or rearming would be a crowning achievement for Soviet diplomacy. On the other hand, the Russians are unlikely to accept a disarmament system that would expose the inner workings of Soviet society, unless they secured in return a substantial reduction of the threat of Western nuclear weapons.

I should like to suggest one approach for analyzing Soviet attitudes in this crucial area. So far as Western attitudes on disarmament are concerned, it is increasingly apparent that they are in large measure conditioned by what people think about certain specific problems, such as the technological feasibility of inspection, the likelihood of accidental war, the threat of surprise attack, the economic impact of arms reduction, and the possibilities of controlling violence in a disarmed world. The whole Western approach to disarmament is dependent on attitudes toward such related issues. The Soviets, for their part, recognize that arms control is both an aspect of military policy and a weapon of the cold war. Soviet positions on disarmament, therefore, must be examined in the context of their own basic assumptions on the nature of war and of the world-wide struggle against capitalism. On these and other related issues, the Soviets have revealed their thinking with greater candor than they have on disarmament itself.

Soviet attitudes toward disarmament are perhaps best reflected in their attitudes toward war itself. The Soviet view is also influenced by other vital considerations, such as their estimate of the viability of the American economy, either with or without an arms race, the prospects for exploiting violence in a disarmed world, and their concern over the impact of an eventual international control system on their domestic and foreign policy. But the most crucial questions for testing whether or not they are seriously interested in disarmament are these: (1) What is

their view of the consequences of nuclear war? and (2) How likely do they think war is, without arms control?

Catastrophe—Total or Partial?

The familiar assumption in the West that full-scale nuclear warfare would mean the collapse of civilization is not shared in the Soviet Union. It is true that Malenkov, on one occasion in 1954, asserted that war "with the contemporary means of warfare means the destruction of world civilization."* But he himself soon qualified this prophecy. After Malenkov's ouster a year later, Molotov made a point of emphasizing the heresy the former Premier had committed: "It is not 'world civilization' that will perish, but the decaying social system of which bloodthirsty imperialism is the core."† Although the emphasis varies with the audience (in India in 1955, Khrushchev spoke soberly of world annihilation), the official Soviet view now is that "Capitalism will succumb completely. . . . Humanity would be thrown back, and the way to Communism would become immensely longer."‡ Thus, war will retard but not prevent the inevitable march toward Communism.

The possibility of total catastrophe from nuclear war poses substantially the same problems for the Russians as it does for the West. The horrors of war are a traditional part of the case for disarmament; and they also form the basic underpinning of the theory of deterrence. Thus, not only the world masses, to whom the Communist-organized "peace campaign" is directed, but also the Western powers, who in the Soviet view are kept at bay by the nuclear power of the U.S.S.R., must be continually reminded of the devastation of atomic war. But, at the same

* *Pravda*, March 13, 1954.

† *Ibid.*, February 9, 1955.

‡ N. Talensky, "On the Character of Modern War," *International Affairs* (Moscow), October, 1960, p. 25.

time, the campaign must not be overdone; comforting distinctions must be preserved. Consequently, the Soviets emphasize that despite the fearful destruction an atomic war will bring, they will "win" it. They assert this not only because the implacable optimism of Marxist theory requires it, but also because they know that a policy of deterrence can be pursued far more effectively if their own population does not believe that the Kremlin has entered into a suicide pact. The Soviet leaders are convinced that in a nuclear arms race there is no substitute for the idea of victory.

Khrushchev has pointed out on occasion that Russia's vastness and the dispersion of her population make her a far less vulnerable target than the United States, not to mention the latter's West European allies. Also, by increasing the emphasis on civil-defense training and planning, the Soviet leadership has sought to create the impression that even all-out nuclear war would mean less than total catastrophe. The implication of such a view is that war is certainly bad and must be strenuously avoided, but that there are objectives of higher value than escaping an atomic holocaust. Thus, the enormous but finite dangers of nuclear war may not be considered so great as to justify a disarmament agreement that would drastically circumscribe the freedom of action of Soviet diplomacy or require fundamental changes in Soviet society.

The Balance of Terror

The second fundamental question influencing attitudes toward disarmament is: How likely is war to occur without disarmament? The risks one is willing to assume in the direction of *disarmament* are a direct function of the risks one believes to be inherent in the race for *armament* supremacy. Those who look upon a balance of terror as a reasonably stable system will be hard to convince that experimentation with [drastic] disarmament is a prudent course.

Beginning with Khrushchev's speech to the Twentieth Party Congress in 1956, the Communist theory of war has undergone a series of dramatic revisions. War is no longer fatalistically inevitable, Khrushchev proclaimed—not because Lenin's concept of the predatory nature of capitalism was wrong, but because the strength of the socialist camp has demonstrated to the "imperialists" the folly of launching a war. Classic Leninist theory, which Stalin reaffirmed shortly before his death, maintained that the most likely form of conflict was a series of wars between capitalist states. On the contrary, Khrushchev recently asserted: "In our time . . . the imperialists are compelled to heed the Soviet Union and the entire socialist camp, and they fear to start a war among themselves."*

Similarly, Moscow considers the deliberate initiation of a capitalist war against the Soviet bloc far less likely than in the past. "Now that there is a mighty socialist camp with powerful armed forces," Khrushchev points out, "the peoples can undoubtedly prevent war."† He continues to assert that the United States is preparing for war against the Soviet Union, but he implies that the real aim of American policy lies in the preparations themselves rather than in war. "They would like," he explains, "to sap our might and by so doing restore the one-time rule of monopoly capital."‡ Ironically enough, this statement is an almost exact replica of President Eisenhower's remark that the true aim of Russian policy is to use the arms race to force the U.S. into bankruptcy.

Khrushchev points to two major sources of Communist strength in what he calls the struggle to prevent the "imperialists" from starting war. The first is the military power of the Soviet Union. Quoting Western statistics on the massive destructiveness of nuclear weapons, Khrushchev suggests that even Hitler would have "thought twice" before attacking the Soviet

* Khrushchev's speech of January 6, 1961. See *Current Digest of the Soviet Press* (New York), February 22, 1961, p. 8.

† *Ibid.*

‡ *Ibid.*

Union had he known that suicide was his certain fate. The second factor is the growing economic and political strength of the Communist camp. Khrushchev exhorts the Communist world to "an active, purposeful struggle," which is to be "economic, political, and ideological." Soviet successes in these spheres, he claims, have demonstrated the dynamism and appeal of world Communism and the growing decadence and helplessness of capitalism.

The implication of these developments in Khrushchev's analysis is clear. As the balance of power in the nonmilitary sphere swings ever farther to the Soviet side, the Western powers will become increasingly reluctant to risk an "adventure." Thus, the political and economic resources of the socialist camp not only make it unnecessary to resort to force of arms for the achievement of Communism, but also open up the possibility of deterring the capitalists by nonmilitary means. In a recent article, Major General Talensky, a leading Soviet military theorist, stressed the secondary importance of military deterrence: "The advancement of military technology taken alone cannot serve as a guarantee of peace. The conclusion of the absence today of the fatal inevitability of war is based chiefly on the *social and political conditions* which have emerged in the world."*

True, any Marxist analysis of war would have to emphasize ideological factors. Ever since the days of Hiroshima—both before and after the atomic monopoly of the United States was broken—Soviet doctrine has refused to admit that any weapon by itself can play a decisive role in war. But there appears to be a growing sentiment in the Soviet Union that the "policy of peaceful coexistence" may be a better means of keeping the West at bay than a system of military deterrence with all its dangers. Accordingly, the Soviet campaign to encourage public opposition in the West to military preparations, to amass worldwide support for Soviet policies, and to isolate the United States from its allies and from the neutralist countries, is designed

* Talensky, *op. cit.*, p. 27.

to deprive the United States of the economic and political bases needed for making war on the Soviet Union.

Annihilation by Accident

As the Soviets' faith in their ability to deter a deliberate war has grown, they have turned their attention increasingly to the threat of accidental war. Since 1957, Khrushchev has spoken frequently of a "fatal error" that could unleash a nuclear holocaust. The mad bomber pilot of the U.S. Strategic Air Command off on a lethal frolic of his own, the flock of geese on the radar screen, and the meteor that looks like a bomb have become familiar symbols in the Soviet campaign to dramatize the threat of accidental war. The Russians developed the theme of accidental war as a major argument for disarmament at about the same time that Western strategists were first expressing concern over the problem of miscalculation and faulty communication in a world of increasingly complex weapons systems. The propaganda motivation for the Soviet tack is clear. By stressing the perils of accidental war, the Soviets could make a strong case for disarmament without acknowledging either that their military strength was insufficient to deter the United States or that the balance of terror was a satisfactory situation.

But there is little doubt that the Soviets are genuinely concerned over the danger of war by mistake. Confronted with the technological problems of maintaining an alert retaliatory force which is neither too slow nor too quick to fire, Soviet military leaders are aware that American strategists face the same agonizing problems. The Soviet press seizes upon false alerts in the United States—accidents involving Strategic Air Command bombers, missile misfirings, and particularly incidents involving overflights—to underscore the dangers of accidental war. Recently, Soviet military writers have insisted that the United States has developed a "strike-first" strategy, an assertion which they base on statements allegedly contained in the still-secret

Gaither Report,* on interviews and Congressional testimony by American military leaders, and books on military strategy published in the United States.

Threat of Pre-emptive Attack

Soviet propagandists also continue to accuse the United States of plotting a "preventive war." But a close reading of their analysis, taken together with Khrushchev's confident statements about the effectiveness of Soviet strategic deterrence, suggests that what they really are concerned about is "pre-emptive war," which is the launching of an attack in anticipation of an enemy blow.

Since 1955, Soviet military writers have evolved a doctrine calling for a pre-emptive strike whenever an enemy attack appears imminent. Since that time, American thinking on arms control has also centered on this problem. It is the extraordinary temptation to attack first rather than lose the opportunity to attack at all that has struck strategists in the United States as one of the principal dangers of the arms race. Western proposals have emphasized schemes for inspection and improved communications to provide mutual reassurance. Schemes such as the "open-skies" plan for the exchange of military information and reciprocal permission of aerial photography, and the more recent proposals for advance notification of missile launchings, are typical examples. At the same time, the creation of an invulnerable retaliatory force has become a major goal of United States strategic planning. The development of a mobile striking force, consisting of Polaris submarines and of Minuteman missiles, which can be launched from moving railroad cars, and the "hardening" of fixed military bases by concealment and fortification are designed to permit the United States the luxury of waiting for accurate verification of a supposed attack before striking back.

* The Gaither Report was a special study of United States national security submitted to President Eisenhower on November 7, 1957.

While the Soviets boast from time to time that their own missile bases are relatively invulnerable due to the vastness of their territory, they have attacked the idea of stabilizing the system of deterrence through mutual invulnerability. They have consistently refused to admit that they are reassured by the recent direction of arms stockpiling by the United States. Despite frequent American declarations that the Polaris is primarily a defensive "second-strike" weapon, the Soviets have launched a violent campaign against this addition to the United States nuclear force and especially its deployment to a base in Scotland. Nor have they sought to offer any reassurance that they themselves intend to be circumspect in the use of nuclear weapons. Moscow's veiled threats to use missiles against England and France at the time of the Suez crisis, its "symbolic" offer to use rockets to support Castro in the event of an attack by the United States, and the unambiguous Soviet ultimatum threatening to destroy any country which permits the United States to launch U-2 flights from its territory—all indicate that the U.S.S.R. is far more interested in presenting what Herman Kahn calls a "credible first-strike capacity"*—*i.e.*, a posture of calculated readiness to undertake nuclear war, designed to deter provocations by the adversary—than it is in offering reassurance.

The arms race has become a bizarre hall of reflecting mirrors in which the attitudes of one antagonist are at least partly a projection of the other's. It is possible that Soviet decision-makers are happier about the direction of U.S. strategic planning than they are willing to admit. But their refusal to acknowledge that invulnerable weapons systems may lessen the danger of accidental war has thus far been persistent. This Soviet disparagement of the concept of invulnerable deterrents may be designed primarily to increase pressure on the West to accept general and complete disarmament; or, as some think, it may be merely a reflection of their lack of sophistication in modern strategy. In any case, a Soviet campaign to label "second-strike"

* Herman Kahn, *On Thermonuclear War* (Princeton, N.J.: Princeton University Press, 1961).

systems as provocative would undermine some of the effectiveness of such systems insofar as they are designed to provide mutually reinforcing reassurance, since the degree of reassurance for the United States is in some measure a projection of Soviet reassurance. . . .

The Issue of Arms Control

The Soviets have also opposed any negotiated arms-control measures which would seek to stabilize the arms race at high armament levels. There are several explanations for this Soviet opposition to schemes that do not involve substantial weapons reduction. First, many of these schemes have called for reciprocal inspection of missile-launching sites. The Soviets have denounced such proposals as crude efforts by the United States to obtain target information, implying that they do not really involve reciprocal concessions in view of the greater secrecy the Soviets now enjoy.

A second possible motivation for Soviet opposition to arms-control proposals is that subtle schemes make bad propaganda. The esoteric reasoning required to follow some of the intricate arms-control schemes currently discussed in the United States cannot be compressed into a slogan. Moreover, to advocate a system of stabilized deterrence is to lose the moral force and emotional appeal of a radical disarmament position. In the Soviet press, arms-control measures are characterized as attempts to "legalize the arms race," while disarmament is hailed as a means of outlawing war. By advocating radical disarmament, the Communist movement attracts broad elements of the populations of both the uncommitted countries and the principal adversary nations. Not only do the Communists thereby gain new sympathy, and perhaps new supporters, but the governments that oppose the U.S.S.R. lose a measure of the popular support they need to maintain an effective defense effort. As James E. Jackson, an American Communist, recently explained

it in the *World Marxist Review*, "the fight for peace and disarmament will help the working people in the capitalist countries to get rid of whatever jingo sentiment the bourgeoisie may have instilled into them during the cold war."*

In addition to their propaganda motives for opposing arms control through a stabilization of deterrent systems, the Soviets have some more substantive objections. Whenever they have discussed the subject seriously, they have referred to the extraordinary technical difficulties of maintaining a stable balance of military power in view of the fact that a technical break-through could destroy the balance. A. A. Blagonravov, one of the Soviet delegates to the [1960] Pugwash Conference in Moscow and Vice-President of the Soviet Committee on Space Research, recently had this to say about devices for detecting missile launchings: "It is not unlikely that at some future time it will be possible to detect missile launchings. But it should also be remembered that every new military invention leads to a counter-invention, and it can safely be said that much research is being and will be conducted to paralyze any possible detection system."†

Thus, the Soviets appear to have some real doubts concerning the reliability of stabilized deterrent systems, perhaps because their own recent successes have demonstrated how crucial an aspect of the arms race is the competition in research. When the Russians proved—by launching the first Sputnik in 1957—that they had developed rocket engines with a significantly greater thrust than those available in the West, the reaction in the United States approached panic. It is precisely at the point when the adversary gives evidence of having achieved a technical break-through promising to neutralize the deterrent force of the "lagging" power that the temptation to strike a "preventive" blow is greatest. The Russians have insisted that the

* "The General Crisis of Capitalism Deepens," IV, No. 1 (January, 1961), p. 45.

† "Destruction of Means of Nuclear Delivery," in *New Times* (Moscow), No. 52, 1960, p. 10.

technical problems of coping with this challenge are greater than the technical problems inherent in a complete disarmament system.

One development, for example, that could seriously upset the balance of a controlled deterrence system based on the possession of large numbers of ICBM's would be the perfection of a highly effective antimissile missile. Although such a development is generally regarded as unlikely because of the enormous technological problems involved, Soviet scientists have expressed concern about the possibility. Writing to Bertrand Russell in the pre-ICBM-days of 1956, Peter Kapitza, the most renowned Soviet theoretical physicist, pointed out that international conventions designed to prevent atomic war "must envisage the possibility of effective means of defense [against missiles] being invented."* He therefore suggested an obligatory exchange of information on research. Although recent official Soviet disarmament proposals have prescribed the abolition of military research in a late stage of the disarmament timetable, they have been silent on methods of verification and inspection.

Restricting the Atomic Club

There is another limitation of stabilized deterrence systems which has undoubtedly occurred to the Soviet leaders, but which they do not discuss publicly. Proposals for improving the functioning of the deterrence system do not directly attack the so-called "Nth-country" problem—that is, regulation of the spread of nuclear capability to a wider number of powers. The Soviets do not discuss this question openly because it would require them to discuss their relations with Communist China with an unacceptable degree of frankness, but they have indicated privately that they are seriously concerned at the prospect of China becoming a nuclear power.

* Quoted in *New Times*, September 20, 1956, p. 14.

Although it is clearly in the interest of the Soviet Union to limit the availability of atomic weapons, and particularly to keep Communist China and the satellite nations from obtaining them, it is not in Moscow's interest to appear to promote such a policy. Thus, wherever the Soviets have been called upon to take a stand directly bearing on this problem, they have sacrificed long-term "Nth-country" control for immediate diplomatic support. Soviet bilateral agreements on atomic cooperation with other countries, unlike such agreements entered into by the United States, have no provisions for inspection and control. Indeed, Soviet representatives in the United Nations have denounced safeguards designed to prevent the diversion of atomic materials into weapons programs as an infringement of the sovereignty of the recipient countries. In addition, at the 1960 Geneva disarmament conference, the Soviet bloc abstained from supporting a specific resolution in favor of studying measures to curb the spread of nuclear weapons.

There have been recent indications, however, that the Soviets are becoming more seriously concerned with the risks of the arms race. References to the expanding "atomic club" have begun to appear in the Soviet press. Soviet scientists taking part in unofficial meetings with Western counterparts have reportedly discussed the Nth-country question with greater frankness.

Moreover, for the first time since the Soviet Union launched the universal disarmament theme in 1922, an effort is being made to reconcile the possibility of disarmament with Marxist ideology. Soviet journals have recently attacked Party members for refusing "to believe in the possibility of disarmament,"* and for dismissing the government's disarmament policy as a "pacifist illusion."† Since the Soviet regime does not willingly expose ideological differences touching on sensitive foreign-policy matters, this discussion might suggest that Khrushchev is

* *Pravda* editorial, June 13, 1960.

† A. Butenko, V. Pchelin, "Sovremennaiia epokha i tvorcheskoe razvitie marksizmaleninizma," *Kommunist*, August, 1960, p. 12.

determined to develop, within the Soviet Union, an ideological position that can encompass negotiated disarmament.

Since 1959, the Soviets have conducted an intensive campaign for "general and complete disarmament" within a specified time period, and Khrushchev has promised that if the West should accede to such a program, the Soviet Union would accept any controls and inspection proposed. This position has obvious propagandistic appeal and has been fully exploited for that purpose. Whether or not Khrushchev would actually sign such an agreement, however, is unclear. One possible reason for the Russians not to accept radical arms reduction, apart from their distaste for inspection, is that acceptance would mean abandonment of the "struggle for disarmament" which has proved to be a highly effective political weapon for them. On the other hand, the Kremlin now proclaims its confidence that the Communist system can win the struggle with the West in a world of near-total disarmament. A disarmed world on the verge of chaos would provide the Communists with a congenial backdrop for further penetration of the non-Communist world. If disarmament means the mere abolition of weapons without any change in the international political system, so that resort to violence at lower levels continues to be both a permissible and a practical course for sovereign states, the Soviets may have good reasons to favor such a policy. A more important question is whether the Kremlin's faith in the inevitability of ultimate Soviet success is now great enough to permit it to accept the kind of restraints on its international conduct that a system of effective controls over comprehensive disarmament would require.

Although recent developments thus indicate changes in the Soviet approach to the disarmament problem, they do not reveal either the depth or the extent of the changes. The Soviet Union, in promoting its disarmament policy in the past, has made many tactical shifts and offered a number of substantive concessions. But it has never appeared to accept the proposition that radical disarmament, which it espouses, will necessitate many profound

changes in the world, including a drastic reorientation of the techniques of Soviet rule affecting both domestic and foreign policy. Whether the logic of the arms race will dictate so fundamental a shift remains to be seen. Soviet policy-makers will indicate the answer by the way they balance the risks of the arms race against the opportunities for Communist aggrandizement in a supercharged world.

10. U.S. National Goals and Arms Control

REPORT OF THE NINETEENTH AMERICAN ASSEMBLY

From May 4 to 7, 1961, sixty-three American citizens met under the auspices of the American Assembly of Columbia University at Arden House in Harriman, New York, to discuss the problems of arms control. Among the participants were specialists in national security from the government and the academic community, as well as leaders from other areas of American life. At the end of their deliberations, the group concurred in the statement presented here. The consensus achieved by this selected cross section of citizens parallels much of the current arms-control literature and probably represents a wider, though unarticulated, consensus in the United States. (The list of Assembly participants appears in Appendix A.)

"Final Report of the Nineteenth American Assembly," *Arms Control: Issues for the Public* (Englewood Cliffs, N.J.: Prentice-Hall, 1961), pp. 201-4. Reprinted with the permission of the American Assembly and the publisher.

I.

FOR fifteen years, the United States has proclaimed disarmament as a goal of its foreign policy. There has been no significant progress toward international agreement on measures to reduce or control armaments.

We are concerned that the policies of the United States and its allies have not been understood abroad and that the American citizen has been left inadequately informed and uncertain concerning his government's intentions.

We are deeply concerned over the increasing risk of destruction inherent in modern weapons and their tendency to exacerbate tensions among nations.

It is time to reconsider assumptions and to determine afresh what United States disarmament policies should be, and how they should be pursued.

II.

The disarmament policy of the United States can be developed and understood only as part of the nation's foreign policy. It must serve the goals of that policy. We believe these goals to include:

A world in which nations settle their differences by peaceful

means; in which changes in international relations can take place peacefully; in which there is no danger or fear of mass destruction, and national armaments are effectively reduced and controlled; in which all nations, whether long established or newly emerging, are able to develop their resources and institutions to give their people a decent life in freedom.

These goals, we believe, are the goals of most peoples.

We have sometimes been hampered in the pursuit of these affirmative purposes because we had to concentrate on defense against the threat of Soviet and Communist Chinese aggression. Rearmament to meet the threat has been indispensable, but modern weapons leave all countries, including the United States and the Soviet Union, exposed to a new danger of destruction by accident, by mistake, by miscalculation. There is also the danger that deterrence may fail or may be overtaken by rapidly changing technology.

These dangers give urgency to the search for arms control. While arms control inevitably entails some risks, there are the gravest risks in doing nothing and leaving the arms race uncontrolled.

III.

In its quest for arms control, there are some things the United States must and can do itself or in cooperation with its allies. Others are possible only through persevering efforts to reach agreements with the Soviet Union.

As to action by the United States itself, we urge the following:

- 1) Arms control and disarmament must be a central concern of American political leadership at all levels of executive responsibility, beginning with the President and including the Secretary of State and the Secretary of Defense. It should also be a major concern of the Congress, through such subcommittees or committees, several or joint, as may be appropriate.

- 2) There must be recognition of the interrelation of political,

economic, strategic, and arms-control factors in making policy decisions, whether the problems appear as problems of foreign policy, defense policy, or arms-control policy.

3) There must be awareness that arms control is a continuing national problem requiring continuous attention, not merely sporadic preparation for negotiations.

4) Accordingly, a United States disarmament agency should be established by statute on a semiautonomous basis, reporting to the Secretary of State and with direct access to the President.

5) The United States should adopt weapons policies which emphasize the capacity to retaliate even after a nuclear attack upon the United States. In the choice of weapons systems, we should seek to avoid undue provocation or the impairment of future arms-control possibilities.

6) The United States should avoid measures which might seriously impair the likelihood of agreement, for example, giving nuclear weapons to additional nations or helping them to develop nuclear-weapons capability.

7) The United States, in cooperation with its allies, should strengthen conventional forces and paramilitary capabilities to deter or arrest local hostilities and avoid any apparent reliance on nuclear weapons.

8) Arms-control research should be greatly broadened and accelerated, particularly in an effort to develop better means of detection of possible violations with a minimum of intrusion into the lives and institutions of the United States, the Soviet Union, or any other country concerned.

9) Economic readjustment as a result of disarmament can, in our judgment, be effected without serious dislocation, but preparation therefor is needed through appropriate research and planning.

10) The United States should make substantial efforts to inform its people and the peoples of other nations about arms-control issues and policies.

IV.

We support the stated determination of the United States to seek effective agreement with the Soviet Union and other nations on arms control and disarmament.

The United States should seek to persuade the Communist bloc that it is in the common interest, and would enhance the security of all, to reach early agreement, separately or in combination, upon effective measures under mutually reassuring systems of inspection and control:

- a) to ban nuclear tests and take other measures to stop the spread of nuclear weapons;
- b) to refrain from placing weapons of mass destruction in outer space;
- c) to give greater assurance against surprise attack;
- d) to devise means, such as improved warning systems and mutual communications, to reduce the likelihood of hostilities based upon miscalculation, mistake, or accident;
- e) to halt production of fissionable materials for use in weapons and to contribute substantial amounts from stockpiles for peaceful uses;
- f) to establish controls upon major weapons-delivery systems.

Such agreements, we believe, are capable of effective control and verification. This does not mean perfect certainty. It means that there would exist a system under which the probabilities of prompt detection of a violation are sufficiently high. Effective control and verification may be by reciprocal inspection, or by international organization or other impartial arrangement. Any proposal for control and verification under a tripartite directorate which can only operate unanimously is a sham. It is as unacceptable as the proposal to replace the office of the Secretary-General of the United Nations with a comparable tripartite directorate.

V.

In addition to seeking agreement on the measures we have suggested, the United States should press for agreement on comprehensive disarmament—reduction of all kinds of armaments and armed forces to substantially lower levels—in controlled stages. Such comprehensive disarmament will require far-reaching changes in the prevailing political climate and patterns of political behavior, including fundamental change in the foreign policies of the Soviet Union and of Communist China.

Without such change, the comprehensive reduction of armaments to low levels would create new tensions and new dangers to peace and security. Comprehensive disarmament with effective controls will also require enlarged and strengthened international institutions equipped with substantial power to help maintain the peace. Proposals for hasty agreement on “general and complete disarmament” should not be allowed to obstruct or confuse these elemental considerations.

VI.

The task will not be easy. We have not sought to minimize the obstacles, which are formidable. But the dangers of inaction are formidable too. If arms control is not achieved in time, weapons may become so complex and widely distributed that national measures will afford little security and international control will become inordinately difficult. Whatever the difficulties, the United States must persevere, for the achievement of arms controls is directly linked to the achievement of our national goals.

11. Defense, Disarmament, and the Free World

REPORT OF THE EUROPEAN-AMERICAN ASSEMBLY

Some sixty persons from thirteen countries, and representing a wide variety of experience, participated in the European-American Assembly on Disarmament and Arms Control in Buergenstock, Switzerland, July 6-9, 1961. Twenty-five participants were from the United States; the others came from Belgium, Canada, Denmark, France, the Federal Republic of Germany, Italy, the Netherlands, Norway, Sweden, Switzerland, Turkey and the United Kingdom. (A list of those present appears in Appendix B.)

The conference was organized by the American Assembly of Columbia University in New York and the Institute for Strategic Studies in London.

The following report emerged after three days of intensive discussion among the Assembly members, who had worked in three separate groups. There was general agreement on this final report, but participants were not asked to sign it, and it does not commit every individual to every conclusion or recommendation. The report was released to the public press. Although it reflects to a remarkable degree the current arms-control consensus, it reveals marginal but significant differences in emphasis when compared to a report issued by a similar, but all-American, gathering held two months before. (See the preceding selection.)

THE countries of the world are now spending some \$300 million a day on armaments, and there are fourteen million men under arms in the Northern Hemisphere. In part, this is a response to the severest clash of political systems that has beset the world for centuries. But it is also a consequence of the accelerating revolution in military technology, of which the atom bomb, the hydrogen bomb, and the ballistic missile may be no more than preliminary incidents, and which, if allowed to continue unchecked and indefinitely, must undermine all hopes of a peaceful world, if not of man's survival.

We are deeply impressed by the growing dangers of the uncontrolled arms race, and firmly believe that attempts to achieve security and protection by the mere amassing of military power are no longer adequate. The alternatives with which modern technology confronts us are the evolution of a sound system of international security or a desperately unsafe world.

It is time, therefore, to reconsider the defense and disarmament policies of the free nations.

General, Comprehensive, and Controlled Disarmament

We want general, comprehensive, and controlled disarmament; *general* in that it would apply to all countries; *comprehensive* in

that it would embrace all categories of weapons and forces; *controlled* in the sense that the system would give confidence that obligations are respected. The attainment of so far-reaching an objective may be the condition of survival in a world of overlapping political, economic, and scientific revolutions.

But we must point out two inescapable implications of such an objective. First, it would require further substantial modification of full national sovereignty. Its latter stages would require a system of central enforcement and adjudication, together with an international police force of considerable power. This would greatly circumscribe the freedom of action of national states.

Second, disarmament must proceed by stages. No state would enter the later and more drastic stages of a comprehensive disarmament system until the preliminary stages had been successfully completed—in particular until the machinery of enforcement and the peaceful settlement of disputes had been created and was shown to be functioning effectively.

There are now over one hundred sovereign states, and the world can no longer be under any illusion that even the preliminary stages of a general disarmament agreement could be swiftly or easily negotiated. The sooner the first steps along this road can be taken, the sooner will it be possible to judge from actual experience when further progress in disarmament will become feasible.

Five Measures That Would Serve the Interests of Both Sides

We believe that the Western powers and the Communist powers have, despite their political hostility, a common interest with all other nations in eliminating the most obvious dangers of war. Time is not on the side of peace and security, and continuous technological innovation is making the problems of control more complex and more onerous. This area of common interest could be advanced by the following measures:

1. Measures to arrest the development of nuclear-weapon capabilities. This [development] is a growing danger; for this reason, among many, we consider it tragic that the Soviet Union now appears to have lost interest in the completion of a nuclear-test-ban treaty, which would have gone a considerable distance to obviate this danger.

2. Measures to halt the production of fissionable material for use in weapons and to begin the transfer of substantial stocks to peaceful uses.

3. Measures to establish controls upon the means of delivering weapons of mass destruction.

4. Measures of mutual restraint against placing weapons of mass destruction in outer space. The military misuse of outer space is an imminent danger, and it is vital to reach an agreement before further research and development tempt the space powers to take a step which would gravely complicate the disarmament problem.

5. Measures designed to give greater assurance against surprise attack and to reduce the danger of war through miscalculation, misinterpretation of the adversary's intentions, or technical accident.

We believe that agreements on these measures could at present be effectively controlled by a variety of means. The common interest of the powers concerned to perpetuate such agreements encourages their being respected. And if there are violations there remains the right of the parties to withdraw from specific agreements.

But we must emphasize the urgency of such limited agreements. With every passing year, the problems of effective control become more complex and might soon prove insoluble. The next generation will not forgive us if we bequeath them a world of many nuclear powers, of space weapons, or one which dwells in constant fear of sudden or accidental war, simply because the major industrial powers are divided by alien concepts of society. Moreover, such limited agreements would provide useful experi-

ence in operating the kinds of international agreement needed to control more far-reaching measures of disarmament.

We are deeply concerned with the security and stability of Europe because it is still the area where catastrophic general war could most easily originate. The attempts to reach a political settlement of the German question or to negotiate a wider system of European security with the Soviet Union have been profoundly discouraging. But this does not absolve either the NATO powers or the Warsaw-Pact countries from the responsibility for negotiating agreements which minimize the danger of war in Europe. In this context, we believe there should be serious study of means to achieve this end on politically acceptable terms, and while maintaining the American military presence in Europe.

Unilateral Western Measures to Reduce Danger

Unfortunately, present tensions make the conclusion of formal agreements difficult in the immediate future. This may change, but in any case it is necessary to frame Western political and military policies in such a way as to minimize the dangers of war with due regard to existing commitments. There are certain unilateral actions that can be taken to increase stability and to underline the defensive nature of Western military preparations. These are of two kinds, political and military.

Military measures include:*

1. Rapid progress with the development of relatively invulnerable weapons systems, and the complementary scrapping of vulnerable and provocative systems, in order to reduce tensions arising from fear of surprise attack.
2. Considerable improvement in conventional forces to increase the flexibility of the Western response to a threat of war

* M. Jules Moch and several other participants did not support this section dealing with military measures.—*Editor*.

and to reduce the danger and fear of recourse to nuclear weapons.

3. Improvements in command and control systems to lessen the danger of rash or unpremeditated action.

4. Improvement of the integration of United States security policy with NATO policy, thereby weakening the incentive to the European powers to exert influence upon the United States by developing nuclear-weapons systems of their own.

Political measures include:

1. Closer coordination of policy on those non-European questions, where the interests of the Western powers are inseparable.

2. Greater support for the peace-keeping authority and machinery of the United Nations.

3. The strengthening, as rapidly as possible, of international law and machinery for the settlement of disputes.

It may very well prove to be the case that only by successfully developing internal systems of interdependence and arms control within the Western alliances (including strengthening the inspection facilities of Western European Union), can we demonstrate both to our own people and to the Soviet Union that such techniques can be applied on a wider scale.

Soviet Obstructionism Is a Serious Problem

It is difficult to escape the conclusion that the Soviet Union has evidenced little serious study [of] its insistence . . . that total disarmament could be speedily achieved in a world of fully sovereign states, of the problems of disarmament, or even of limited measures of control. We believe that this attitude may change under the pressures of military technology and Soviet understanding of the mutual interest of all powers in genuine progress toward disarmament.

We are also aware that progress in the field of disarmament would not necessarily imply any diminution of the present strug-

gle, but would transfer it to the plane of economic and political warfare. This we are fully prepared to accept since we are confident that our own societies and policies are able to meet these new forms of challenge.

But the Soviet attempt to impose a tripartite system of control at the executive levels of a disarmament-inspection-and-control system, as well as in the United Nations, appears to us to place insoluble difficulties in the way of further progress.

Two Fallacies Have Bedeviled the Disarmament Dialogue

The consideration of the problems of disarmament or arms control has too often been bedeviled in the past by two fallacies. First, that for agreement between nations good will and mutual confidence are enough, without regard for the hard study of common interest and workable techniques of control and inspection that are necessary. Second, that military policies and disarmament policies lead in opposite directions rather than being considered as complementary aspects of the same problem—the maintenance of national and international security.

To overcome this confusion we believe that:

1. Governments should expand official research and actively encourage independent research on the problems of disarmament and arms control.

2. There must be a greater awareness, both in the governments and among the peoples, that these are continuing problems requiring continuous attention, [and cannot be dealt with adequately in connection with] sporadic preparations for negotiations.

3. The interrelation of disarmament and defense policy must be considered in taking steps in military, strategic, or political planning. This implies a much closer cooperation between Foreign Offices and military staffs in the development of disarmament and defense policies.

4. Greater efforts, official and private, should be made in all countries to inform the public concerning questions of disarmament and the problems it poses for individual nations.

At the same time, we would welcome programs, official and unofficial, enabling those who have given deep thought to these complex questions in the West to hold a more continuous exchange of views with Soviet experts than is possible at present, leading, we would hope, to joint studies in this field.

In such ways, we may hope to move towards the realization of all men's constant and ardent desire for disarmament and lasting peace.

12. Peace Could Be Achieved in Our Lifetime If . . .

By JEROME B. WIESNER

Jerome B. Wiesner, Special Assistant to the President for Science and Technology, has first-hand knowledge of the complexities and difficulties that stand in the way of a viable arms-control agreement. He says that if the nations of the world would devote one fourth of the energy "now being expended in the arms race to the quest for lasting peace and a better world, the goal, though a difficult one, could be achieved in our lifetime." Mr. Wiesner also wholeheartedly supports the idea of an intensive research and development program designed to find ways to mitigate the arms race.

"Foreword," *Arms Control, Disarmament, and National Security*, ed. Donald G. Brennan (New York: George Braziller, 1961), pp. 14-16, and (c) 1960, 1961 the American Academy of Arts and Sciences, in whose journal, *Daedalus*, this article first appeared. Reprinted with the permission of the author and the publisher.

THERE is a growing realization among knowledgeable people that if the arms race is allowed to continue its accelerating pace, our country will have less security, not more, with each passing year. As a result, there is an ever-increasing likelihood of a war so disastrous that civilization, if not man himself, will be eradicated.

My own experience is not very different from that of many others who have worked hard during the past decade and a half in an effort to provide the country with a strong military defense. We have seen each of our advances matched by Soviet developments, so that, as time passed, the only discernible result has been that both our nations have produced more and more destructive weapons against which there is no defense.

One of the most ironic aspects of the situation in which the United States and the Soviet Union find themselves is that each is running an arms race with itself. Because of the technical capabilities of both countries, neither will for long lag behind the other in developing any new weapon. As a consequence, we are forced to work harder and harder in the effort to maintain a given degree of security. Thus, we create twin spirals in invention and production, which, because of the nature of the weapons involved, appear to lessen, rather than enhance, the possibility of that security.

Obviously, the most important task confronting us today is to find the means of halting the arms race and eliminating the danger of nuclear war. This does not appear to be something that can be safely done by unilateral actions on the part of the Western allies, and it is doubtful whether the Soviet leaders would regard unilateral disarmament as a course on which they could embark with safety. Like it or not, the nations of the world must make a superhuman effort, working together, to reach agreements leading to some form of rational system of world security.

People Are Skeptical About Disarmament

Yet, most people do not quite believe in disarmament. In fact, some people view with suspicion any attempt to impose restrictions on military activities, and many more are skeptical of the possibility of actually achieving a meaningful agreement on arms control. Such cynicism is strongly supported by historical precedents. On the other hand, history also indicates that until now wars have occurred with distressing regularity, and that in recent times each successive major war has been larger and more destructive than the previous one. There is every historical reason to conclude that, if we drift along as we are now doing, another major war will certainly occur. We can only avoid that disaster if the nations of the world regard war itself as a common enemy and make a truly consummate effort to work together in resolving the important issues that are involved.

Unfortunately, nations, like most individuals, become interested in adequate fire protection only after the house has burned down. At least in the past, there has been little official willingness anywhere to undertake the effort required to make a success of arms control. Shall we wait until after the next world war, in which hundreds of millions of people will undoubtedly be killed, uncountable future generations condemned to genetic death or malformation, and thousands of billions of dollars

worth of property destroyed—before it becomes obvious to the survivors that war should be outlawed? In retrospect, it will become impossible to understand why the consequences of the arms race were not crystal clear beforehand, and why an otherwise rational people like the citizens of the United States did not insist that their leaders make a reasonable effort to find alternatives.

Large-Scale Research Required

I feel a word of caution to the reader is needed. Partly owing to the small amount of sound research in this field in the past, there are many real gaps in our understanding of the military, technical, and political problems involved. Many of the authors, myself included, stress the need for intensive study. We are hopeful that such studies will provide knowledge which will make it possible to proceed with more confidence, but I should like to warn against the expectation that any amount of advance planning and study, no matter how thorough, will see the problem completely solved. But a start must be made. First, and second, and continuing studies must be initiated. Research and development on a large scale are necessary. And the nations must be willing to try out the results of these carefully thought out studies without insisting on a blueprint completion. We must accept an understanding of the desirable objectives and the multitude of technical details involved, so as to gain the confidence to set off on the road to peace.

I believe we already have a sufficient understanding of the problem of arms control to make an effective start, and I am confident that if the nations of the world were to devote one-quarter of the effort in terms of manpower and money now being expended in the arms race to the quest for a lasting peace and a better world, the goal, though a difficult one, could be achieved in our lifetime.

13. Defense and Disarmament Are Inseparable Twins

By HUBERT H. HUMPHREY

As chairman of the Senate Subcommittee on Disarmament since 1955, Senator Humphrey has been the most persistent advocate in the United States for a serious national arms-control effort. He has repeatedly called for more research and study. He has urged more intensive diplomatic activity. The studies and hearings of his subcommittee have had a significant impact on the decisions of the Executive branch.

In this brief essay, lifted from one of his speeches before the Senate, Mr. Humphrey insists that disarmament is not inconsistent with national defense. Defense and disarmament, he says, should be "the inseparable twins of national-security policy." He illustrates his thesis by calling for a greater effort to close the "missile gap," pointing out that a "balance of terror" is less horrible than an "imbalance of terror."

Hubert H. Humphrey, "U.S. Defense and Disarmament Policies," a speech on the floor of the United States Senate, June 4, 1959, in *Congressional Record*, pp. 8864, 8865.

FOR too long now, the words "defense" and "disarmament" have been treated in our thinking as though they represented the opposite points on a compass or the extremes in the thermometer. Writers on defense and military strategy compose long and scholarly dissertations without once mentioning the subject of armaments control; or, occasionally, they may throw in a sentence or two, almost as a sop. At the other extreme, there are writers and organizations who prepare equally long and learned theses on the subject of disarmament, without mentioning weaknesses in our Defense Establishment.

I do not see why disarmament and defense cannot be made the inseparable twins of national-security policy. I should like to illustrate this concept by referring to the present missile gap.

Ample evidence has been presented that the United States has allowed the Soviet Union to move dangerously ahead in the development and production of long-range ballistic missiles. We now know that unless we put forth great effort, within the next two years especially, this gap will so widen that the Soviets may feel able to attempt a major surprise strike. The Soviet Union may be tempted to strike, because the Kremlin will know that we do not have enough long-range missiles, well enough protected and dispersed, to strike back after an initial attack,

and that our strategic-bomber command would not have sufficient time to get off to deliver a major blow against the Soviet Union, in retaliation. A military balance of terror is not very comforting; in fact, it is a horrible thing. But this horror is exceeded by the prospect of an imbalance of terror, an imbalance favoring the Soviets.

We Must Close the Missile Gap

I am not a defense expert, nor do I claim to be, but insofar as I am aware, no one in the administration and no one in the military departments of our Government has argued that these are not facts. As a consequence, the United States is inviting disaster through a failure to take the necessary steps to close the missile gap and to take the necessary steps to harden our strategic air bases.

At the same time, the United States has not persisted in the development of plans whereby the threat of an attack by long-range missiles might be removed and the missiles eliminated, or their production and testing curtailed. The Surprise Attack Conference was a start, but at that Conference the United States' terms of reference were limited to inspection only. Measures of control and reduction of missiles, for example, were not included. We were not prepared for that Conference, and neither were the Soviets. But that Conference is over now and we should not be standing idle. We must start to talk and to prepare for the next one. We ought to have a plan and a policy, which is pursued vigorously, for the control or the eventual elimination of these missiles. Soon the missiles will be installed in their launching platforms and readied for instant firing. A mistake, a miscalculation, or madness on the part of one or a few people could send these gigantic birds of destruction on their way to foreign territory. Yet, months and years go by, and little serious effort is made toward their control.

We Must Work for Missile Control

We must simultaneously increase our efforts and our expenditures, if necessary, to close the missile gap, on the one hand, and to devise plans for missile control, on the other. Such an effort should be pursued all down the line in areas of defense and disarmament. Alongside such a program of action, our negotiators, our information service, and our diplomats should be waging a campaign to bring pressure on the Soviet Union and other nations to enter into serious negotiations. This campaign should be waged at every level—at the United Nations, at summit conferences, at foreign-ministers' meetings, and at any other forum where representatives of the major powers meet. . . .

The American people are not unwilling to make sacrifices for adequate security and defense. They will make the sacrifices, provided two conditions are met. First, they must be told the truth—the hard facts about the world situation—facts that are military, political, social, and economic. And secondly, they must be shown that these sacrifices may one day contribute to the emergence of a better world—a world in which competing systems, be they religious, economic, social, or political, can compete without the fear that the competition must lead to all-out war.

The international crises demand that we adopt such a program for our national security and for the security of the rest of the world. Military preparedness alone cannot give us the security we want. A policy of defense only is inadequate and promotes attitudes of hopelessness on the part of our people. And we can use beautiful words about disarmament and peace, but these will be futile also unless we apply ourselves and make the necessary efforts both to control and reduce the weapons of war and to build a Defense Establishment that is balanced and meets the Nation's defense requirements.

Military Defense Is Not Enough

If we do these things, then our sights can be lifted beyond the terrible thoughts that a nuclear war, large or small, is probable. So long as the United States views the world crisis primarily in military terms, and exclusively as a crisis against Communism, its moral stature and its leadership qualities will be seriously questioned, and may be irrevocably determined in nations and among peoples throughout the world who have not a prayer of a chance to defend themselves against aggression by a major power. It is one thing to build varied and strong defenses, but quite another to say this defense is all we have. If the democracies of the world are to survive, they must place more emphasis and put more effort into works of peace at the same time that their defense efforts act to deter war from breaking out. Defense is a shield designed to give protection and buy time while we pursue with courage, imagination, and purpose the war against man's ancient and relentless enemies—poverty, hunger, disease, illiteracy, injustice, and economic stagnation.

14. We Must Put Our Intellectual House in Order

By HENRY A. KISSINGER

Mr. Kissinger is critical of the past arms-control record of the United States Government. He believes the level of public debate thus far has been unworthy of the problem. To improve public understanding and national policy on arms control, he calls for a serious intellectual effort and "a fundamental readjustment of traditional categories of thought." He warns against the dangers of sentimentality.

In this essay he puts forward several propositions that he considers basic to an arms-control effort adequate to the dangers we face. "The test of any agreement," he says, "is whether it adds to or detracts from stability, whether it makes war less likely or more so. . . . The purpose of arms control is to enhance the security of *all* parties."

The Necessity For Choice (New York: Harper & Brothers, 1961), pp. 279-86. Reprinted by permission of the author and the publisher.

No aspect of American policy has received less systematic attention than arms control. Substantial intellectual as well as material resources have been devoted to the study of strategy. Yet arms control, which is its reverse side, has lacked a focus of attention. As a result, our government has found it difficult to achieve agreement about desirable goals and, even more, to develop a dynamic program. Before there can be successful negotiation on arms control, we must get our intellectual house in order.

The need is all the greater because the rate of technological change has continually outstripped the pace of negotiations. Whatever may have been the possibilities of controlling nuclear weapons when the Baruch-Lilienthal Plan was first formulated, the number of weapons produced in the interval and the size of the stockpiles have made complete abolition impossible to inspect. Similarly, in the early stages of the missile age it might have been possible to arrest the proliferation of rockets, either by a ban on testing or through a severe limitation on production, or both. But neither side sufficiently understood the implications of missile technology for this proposal ever to be seriously advanced. Today, measures to control the missile race are infinitely more complicated. Three conclusions follow:

First, arms-control schemes should be developed with a clear

understanding that their rate of obsolescence is as rapid as the rate of technological change. The obsolescence of arms-control schemes is likely to be no less great than that of strategies. They must, therefore, have a built-in mechanism for adaptation and review.

Second, there are few universal schemes of arms control. We must be prepared to face the fact that proposals which may be highly desirable given one state of technology may have to be replaced by a contrary policy when conditions change. For example, as long as only four countries possess nuclear weapons, it would be highly desirable to advance schemes to deal with the Nth-country problem. Should nuclear weapons spread to a considerable number of countries, however, arms control—in the sense of striving for a maximum of stability—may have to set itself different goals. Then, the danger to peace will reside in the vulnerability of the newly developed retaliatory forces and in the danger that nuclear weapons may not spread symmetrically between the Nth countries which consider each other mortal enemies. Arms control properly conceived may then have to strive to help Nth countries *protect* their new-found nuclear arsenals and assure that the spread is symmetrical.

Third, there is a critical point in the development of any weapon after which arms control becomes impossible or at least extremely intricate. After this point is reached, it will seem to both sides—and probably correctly—that they will be more secure through unilateral efforts than through any control system that they are able to devise, agree on, and inspect. This suggests the crucial importance of controlling new weapons in the very early stages of development. It means also that we have to come to grips with controlling arms when the implications of new developments are still least understood.

Unfortunately, the debate about arms control has often contributed more to passion than to understanding. The notion that a country can increase its security by sharing information with a potential enemy rather than by withholding it—central to many arms-control schemes—is difficult for men who have spent a life-

time with the conviction that secrecy is a military weapon. Not every technological advance increases a society's safety, and a certain equilibrium of destructive ability may prove more conducive to the prospects of peace than an unchecked arms race. But these notions require a fundamental readjustment of traditional categories of thought.

The Need for a Unified Strategic Doctrine

And this re-examination is made difficult by a number of factors, including the manner in which the alternatives are put. For one thing, it is becoming increasingly clear that no real progress is possible in the field of arms control until we achieve agreement within our military establishment and within the Western alliance about the elements of security. Without an agreed strategic doctrine, we will possess no criteria to determine whether a given scheme would add to stability or detract from it. The view we develop about the significance of local defense will determine the conclusions about the feasibility of demilitarized zones. The strategic assessment of the role of nuclear weapons will shape the attitude toward such issues as the nuclear test ban or the Nth-country problem. The interpretations of vulnerability influence the schemes for the prevention of surprise attack. Since we have resolved none of these issues in our own military establishment or within the Western alliance, it is not surprising that Western arms-control proposals have been so weak and often beside the point.

The situation has not been helped by the attitudes of some of the most vocal and passionate advocates of arms control. Too often they have given the impression that simply because their goal is important it can be reached easily. Though they have argued correctly that a purely strategic approach may prove self-defeating, they have carried this proposition to the extreme of dismissing strategic considerations impatiently as representing the attitude of shortsighted or power-mad men.

Thus, the absolutism that identifies safety with physical power

all too often has been countered by another absolutism, which pretends that arms control is an alternative to our security effort rather than a complement to it. Emphasizing the reduction of striking power or the exchange of military information, which is, after all, one of the purposes of arms-control measures, many military experts have seen in them an inevitable weakening of our strategic position. Stressing the cooperative nature of a disarmament agreement, many proponents of arms control have considered the fact of an agreement more important than its substance. It is understandable that military men who have dedicated their lives to a study of strategic problems find it difficult to be sympathetic with programs of deliberate limitation of power or with an effort to exchange information. It is natural that many of those who had met incomprehension and ridicule when first suggesting the need for arms control now adopt essentially an advocate's position and seem more concerned with finding some argument to refute an objection than with examining it dispassionately. Nevertheless, their debate has paralyzed understanding because the unstated assumptions and the mutual distrust have been more significant than the arguments actually advanced.

A symptom of this confusion has been the manner in which most of our proposals have been developed. The general pattern has been that we have been under pressure to come up with some scheme simply because a conference was approaching, instead of entering arms-control negotiations because we had a program which we were eager to see implemented. Our positions have generally reflected not so much strong conviction or clear understanding as the necessity for coming up with *something*. Both the negotiations on the prevention of surprise attack on November, 1958, and the disarmament conference of March, 1960, were prepared by *ad hoc* committees assembled when the conference was imminent. The Coolidge Committee, which was supposed to develop the U.S. position for the 1960 conference, was much maligned and its report was finally discarded. The real

villain, however, was not the committee but the conception which called it into being. It was against all reason to expect an *ad hoc* committee, most of whose members were spending only part time on their assignment, to resolve in less than six months a subject of such technical complexity and on which opinion has been so divided.

Whatever the cause, when the Western diplomats assembled a month before the conference to prepare their program, an American position had not yet been developed, and a week before the talks the Western allies had not yet reached agreement on their proposals. Inevitably, the Western program had an air of improvisation. The process by which it emerged was directly responsible for the lack of assurance with which it was maintained.

Ambiguity of Soviet Intentions

The failure to make progress towards arms control is not, of course, primarily the fault of the United States. Soviet proposals so far indicate that either the Soviet leaders have as much difficulty in understanding the problem as we do, or else that they are using the negotiations to demoralize the free world and to induce it to disarm unilaterally. It is discouraging that almost every Soviet proposal seems more designed to exploit the weariness of the West or to achieve a unilateral advantage than to slow down the arms race. Our recognition of the importance of the program and our eagerness to find a solution must not blind us to the lack of seriousness of much of the Soviet performance.

But our judgment about the Soviet approach does not excuse the confusion of our response. Whatever the Soviet intentions, our task is essentially the same. Perhaps no serious negotiation is possible at all. But we will be able to determine this only by becoming clear in our own minds about the purpose of arms control and by devising serious, specific schemes for attaining it. If the Soviet Union rejects proposals which are designed to increase its security together with ours—which is the essence of

any responsible program—it will have given clear proof that there is no alternative to the arms race.

Before we can advance serious proposals, we have to clarify our purposes. It is said that we must engage in arms control to free resources for the *real* competition, which is in the field of economics. It is claimed that arms control may reduce the burden of taxation. Arms control is advocated as a means of speeding up the evolution of the Soviet system. Involved explanations are advanced that we can trust the Soviet Union to observe any agreement.

Almost all these arguments are essentially irrelevant. The Soviet leaders can hardly be attracted by schemes whose primary purpose is announced to be the transformation of their system. Useful schemes ought not to depend on whether or not we can trust the Soviet leaders—indeed, if we could trust them, they might be less important. Arms-control schemes will be effective if they contain their own incentive for observation and if there can be confidence, not in the other side, but in the control arrangements.

The argument about freeing resources for economic competition begs the principal question, which is, after all, precisely whether it is possible to develop arms-control measures which promote stability and achieve this end. To promise that savings from disarmament are to be applied to economic development programs confuses the issue in two ways: by implying that there will be savings and by creating the impression that two courses of action, each vital in its own right, are dependent on each other. It is not a big step from the assertion that resources saved from arms control will be applied to economic development to the proposition that expanded economic development must *await* disarmament. Or else the argument can be reversed in an equally misleading manner: arms control can be advocated in order to free resources for economic development. Because they have accepted this notion, many groups in America and many more abroad have felt impelled to establish an illusory

priority between economic development and security. Such an attitude is equally disastrous to arms control and to economic development. Our economic programs do not have to await disarmament. The required resources are well within our capabilities, even on the assumption of a substantial defense effort.

Then, again, it is not at all certain that arms control will, in fact, free resources, particularly in its early phases. Inspection is expensive. Additional funds for research are essential. A recasting of our military establishment will almost surely have to accompany arms control. To justify arms control as a device to save money may cause us to be attracted to the wrong schemes for the wrong reasons.

We must not confuse collateral with primary goals. The purpose of arms control is to enhance the security of *all* parties. Any attempt to achieve a unilateral advantage must doom arms control. Similarly, neither reduction of forces nor inspection can be an end in itself. The test of any agreement is whether it adds to, or detracts from, stability, whether it makes war less likely or more so. No collateral benefits will be able to compensate for badly conceived control measures.

The Dangers of Sentimentality

In this examination, sentimentality is as dangerous as rigid persistence in the patterns of the arms race. The apparently simple remedies may be the most dangerous. Preventing accidental war is so important an objective in itself that we need not confuse it with sociological explanations of the impact of inspection on the Soviet system. Reducing the fear of surprise attack is a worthy enough task for us to engage in without making elaborate arguments about the freeing of economic resources. Dealing with the diffusion of nuclear weapons requires the best analysis of which we are capable, rather than a strident debate between extreme positions.

At the same time, however dedicated we may be to arms

control, it is important not to approach it with the attitude that a failure of negotiations will inevitably doom humanity. Such a conviction is bound to produce pressures for unilateral disarmament and, therefore, remove any incentive for serious negotiations on the part of the Communists. If the Soviet leaders are convinced that the fear of war overrides all other considerations, two consequences will follow. They will be encouraged to engage in the most violent threats in order to demoralize the free world further. And they will become convinced that arms control is unnecessary since they are already protected by the free world's fears. Paradoxical as it may seem, a measure of instability in the arms race is required to provide an impetus for arms control.

Moreover, a feeling of despair should arms control prove unattainable would also be factually wrong. Without arms control, stability will be more difficult to achieve. But it probably can be achieved even then. In the equation of retaliatory forces, advances in mobility will probably promote a degree of invulnerability even without a negotiated agreement. And we could take unilateral measures of arms control along the lines described earlier in the chapter.

In short, while arms control is one road to peace and a crucial one, it is not our sole chance to bring it about. For this reason, it is probably unwise to call the proposed new agency charged with the responsibility of coordinating and devising arms-control proposals a National Peace Agency, as has been suggested. To be sure, arms-control measures may, if properly devised, contribute to stability. Also, a focus for concern with this problem in our government is essential. It is regrettable, however, to leave the impression that there is only *one* road to peace or that only *one* organ of our government has this goal. In the nuclear age, all national policies must be directed towards peace, our diplomacy and our military program no less than our arms-control effort. No agency should claim a monopoly on the quest for peace.

If we are to make progress in the field of arms control, the Military Establishment must come to understand that in the present state of technology an arms race is the most unstable of all forms of security, and that, properly conceived, arms control must increase the security of *all* countries. And many enthusiasts for arms control must realize that ardor is no substitute for precision. A great deal depends on the ability to be concrete. In the next few years, we may have perhaps our last opportunity to stabilize the arms race by means of negotiation. Perhaps Communist obduracy will foil our most earnest efforts. But it would be unforgivable if we failed because we refused to face either the importance or the complexity of the challenge.

15. The Case for British Unilateralism

By BERTRAND RUSSELL

Lord Russell, a leading British spokesman for unilateral disarmament, gives in this essay his arguments for a disarmed and neutral Britain. He does not recommend unilateral disarmament for the United States. Central to his position is his belief that Premier Khrushchev has been a sincere advocate of nuclear disarmament and that American leaders have not.

Unilateralist views such as those of Lord Russell have been widely circulated in Great Britain. It is essential for Americans to have some acquaintance with these views if they are to understand fully the arms-control problem.

"On 'Unilateralism,'" *The New Republic*, March 6, 1961, pp. 13, 14. Reprinted with the permission of the author and the publisher.

BRITISH membership in NATO and American nuclear weapons on British soil or in British waters offer Russia an incentive for an attack on Britain alone. Such an attack could wipe out the whole population of Britain in, at most, an hour. Mr. [Herman] Kahn [in his book *On Thermonuclear War*] argues (to my mind, conclusively) that, in spite of obligations under NATO, America would not respond by a full-scale nuclear attack upon Russia. Indeed, it is difficult to see what valid argument America could have for doing so. The British would be all corpses, and could no longer be helped. The only effect of American intervention would be to turn the rest of the world into corpses. It follows that the protection which Western Europe is supposed to derive from NATO is illusory. While Britain remains in NATO and gives hospitality to American nuclear weapons, Russia has a motive for destroying Britain. If Britain were neutral and destitute of American nuclear weapons, Russia would have no greater motive for attacking Britain than for attacking India or any other neutral. It follows that the existence of nuclear weapons on British soil exposes Britain to greater danger than a policy of non-nuclear neutrality.

While the missile gap existed, America had a powerful reason for desiring launching sites in Western Europe. But the missile gap, if not already non-existent, is on the point of becoming so,

and will certainly have become so before British unilateralism becomes government policy. As soon as the missile gap is closed, America ceases to have the same need for launching sites in Western Europe. On the contrary, the obligation under NATO to protect Western Europe is onerous and may entail a situation in which disaster to the United States can only be avoided by what will appear as a breach of faith. For this reason, British unilateralism is in the interests of America as well as of Britain. So far, I am still in agreement with Mr. Kahn.

But all this offers no solution to world problems. It leaves Russia and America facing each other still with a stock of nuclear weapons and still able to destroy the human race whenever some fanatic in a key position thinks fit to do so or when some accident is misinterpreted as a hostile attack. British unilateralists, therefore, have to admit that British neutrality would be only a step, and perhaps rather a small step, toward the prevention of a general nuclear war. As to what further steps should be taken, I can speak only for myself, not for the general body of British unilateralists.

A Neutral Britain Could Facilitate Disarmament

Personally, I should not advocate American unilateral disarmament because I think that, if America and Russia alone were concerned, it would not be difficult to reach a disarmament agreement. The difficulty in all negotiations since 1945 has been that East and West each came to conferences with complete schemes and each felt that motives of prestige forbade any accommodation to the schemes of the other side. If disarmament agreements are to be reached, a new method will be necessary. A neutral Britain, in combination with other politically mature neutrals, could draw up a comprehensive draft treaty between Russia and America which should aim at giving no net advantage to either side. Such a draft treaty could be accepted by both sides without loss of face. It would no longer be necessary,

as hitherto, for a disarmament conference to begin with a head-on collision between suspicious rivals. It could begin, instead, with a neutral advocacy of a scheme which there would be no reason to suspect of containing traps for the unwary. One of the reasons for wishing Britain to be neutral is that it would make possible British participation, and perhaps leadership, in such negotiations initiated by neutrals.

It must always be remembered that the supreme danger is a general nuclear war. It seems that the Soviet Government has now realized this fact, and has even been prepared to quarrel with China in advocating a policy of pacification. It is customary in the West to suppose that any sensible statement by the Soviet Government must be insincere. I do not think that this can be believed by anyone who takes the trouble to study the facts. Khrushchev has proclaimed with all the vigor of which he is capable (and that is saying much) that, if the West will accept a disarmament agreement, the Soviet Government will agree to any amount of inspection to make sure that the terms are carried out. I read, lately, an article by Major General Talenski called "The Character of Modern War." This article was first published in Moscow, but was printed in English in *Survival*, the journal of the Institute for Strategic Studies, for January–February, 1961. The whole tone of the article makes it obvious that it is addressed to Russian public opinion. After setting forth the vast destruction to be expected in a nuclear war, he concludes: "War in a military-technical sense has outlived itself as a weapon of policy." Unlike American military authorities, he is urgently in favor of nuclear disarmament. In this, he is only expressing what is now Soviet orthodoxy. Khrushchev has risked his whole career and probably his very life in the endeavor to persuade the Communist world, including China, that war is not inevitable and can and must be avoided. I wish that some equally powerful voice in the West were proclaiming the same doctrine. But when Khrushchev comes before a disarmament congress with a proposal for disarmament, the West is indignant and re-

plies, "Surely you must know by this time that disarmament is not one of the purposes of a disarmament conference." It is a tragic fact that in Khrushchev's fight with the Communists who think war is inevitable, the West has done everything in its power to give the victory to his opponents. What the West ought to have done was to assume his complete sincerity and proceed to negotiations on that basis. If there were any insincerity on his side, such negotiations would soon reveal it.

It Is Better to Be Red than Dead

Some years ago, Mr. Joseph Alsop, I think with a view to discrediting me, had an interview with me in which he stressed almost exclusively my opinion that a Communist world would be better than no world. Sidney Hook took this up and argued vehemently against me. . . . And when I pointed out to Dr. Hook that the question was somewhat unreal, since freedom for the Western world can almost certainly be preserved without war, he headed his reply, "Lord Russell retreats," whereas, in fact, I have not retreated a single inch. He also assumed that what I said was only addressed to the West, whereas I was equally saying to fanatical Communists that a completely capitalist world would be better than no world. I hold both parts of this view, but I do not hold that such a choice need ever be necessary.

I do think, however, that it is unfortunate in the highest degree that the opposite view should be widely held in America, since it undoubtedly increases enormously the likelihood of a nuclear war. Those who hold such a view will be inclined to hold also that negotiations with the Communist bloc must be broken off if any concession, however slight, had to be made to what the Communists demand. Negotiation, if it is to be successful, must be a matter of give and take. It cannot proceed on the assumption that one side is wholly right and the other wholly wrong. Negotiation, sooner or later, is inevitable if the human race is

to continue. Mr. Kahn, in a very optimistic discussion of the results of a nuclear war, concedes that after such a war, "life is going to be stark, elemental, brutal, filthy, and miserable." He also agrees that, during and after such a war, America will be obliged to establish a system of rigid socialism indistinguishable from the system which we should have been fighting to destroy. He thinks that, if the American Government is very wise, there *may* be enough Americans and enough Russians left at the end of the war to make recovery possible. One is left to suppose that, after the necessary minimum of recovery, each side will prepare for another war for, if such a war is to be prevented by negotiation, the negotiation might as well occur now. But he gives no hint that this is possible at the present time.

I should like to end with a few words about pacifism. I have never, myself, been a complete pacifist; I favored the Second World War, but not the First, and I have seen no reason to think that, in either case, I was mistaken. But modern weapons of mass destruction have introduced a new element. Whatever may be the purposes of a war, they will not now be achieved. Both East and West can give the world more of what they respectively consider desirable if they achieve peaceful co-existence than if they indulge in nuclear war. This is completely obvious to every candid mind. Only fanaticism and national pride prevent it from being generally recognized. Catholics and Protestants, in the course of 130 years, learned to tolerate each other's existence. Communists and anti-Communists have to learn the lesson of mutual tolerance more quickly, because wars have become more destructive. We can all live or all die. No other choice is possible. East and West alike have to learn this lesson. One must hope they will learn it before it is too late.

16. The Disarmament Delusion

By ROBERT STRAUZ-HUPÉ

An important segment of American opinion believes that disarmament under present political conditions in the world is dangerous for the United States and the West. According to this view, the Soviet Union is interested in disarmament primarily because its leaders believe such a course would disadvantage the Western world. Proponents of this position hold that Premier Khrushchev is essentially correct in identifying disarmament with the advance of Communism. They believe that the character and ambitions of the Soviet regime preclude any arms-control agreement that would preserve the security of the free world.

The author of this essay speaks from this general perspective. He believes that "armaments are not the causes but the symptoms of conflict," and that a genuine arms-control agreement that would actually reduce the danger of nuclear war for all parties must await a fundamental change in the goals and strategy of the Communist bloc. He sees no such change in sight.

Mr. Strausz-Hupé agrees with Salvador de Madariaga that the fundamental problem in arms and arms control is "the nature of the political systems" involved and that disarmament "is really the problem of the organization of the World Community."

In this essay, several paragraphs of which have been omitted, the author comments on Mr. Khrushchev's speech before the General Assembly of the United Nations on Sep-

tember 18, 1959. The Soviet leader's position has not changed in the two years which have elapsed since then. (See essay No. 7.)

"The Disarmament Delusion," *United States Naval Institute Proceedings*, February, 1960, pp. 41-47. Reprinted with the permission of the author and the publisher.

Is Total Disarmament Feasible?

Ever since the introduction of the means of mass destruction, men of good will have fervently searched for a way to dispel the specter of conflict. It is understandable that World War II strengthened the desire for peace. The reasons are plain: The destructive power of armaments and their cost have grown and are growing far beyond anything envisaged in the halcyon years after World War I.

Yet even "peace-loving" nations continue to arm while insisting on the need for disarmament. Competitive armament between nations cannot be attributed, as many naïve souls thought after World War I, to the evil machinations of ambitious generals and greedy munitions-makers. Armaments reflect the fears and ambitions of whole peoples and, ironically, their craving for economic security or prosperity. *Armaments are not the causes but the symptoms of conflict.*

Consequently, Khrushchev's proposal for total and universal disarmament slights the intelligence of anyone who has pondered the meaning of conflict. He is proposing, in effect, that not only the two superpowers and their allies forswear physical struggle, but that competing nations everywhere bury their differences. Will India and Pakistan scrap their arsenals as long as the status of Kashmir is in doubt? Will Israel and the Arab states accept

disarmament as long as their views of the future of Palestine remain diametrically opposed?

But even if, by some miracle, political and ideological strife were suddenly to vanish from this earth and nations everywhere were to forego expansionist aims and suppress the instincts of self-protection, the problem of putting a universal program into effect staggers the imagination. It would mean a complex multitude of interlocking treaties, covenants, and agreements. It would mean a mammoth organization, with nerve centers in every area of the world. Finally, it would mean thousands of inspection teams, staffed by experts and provided with the most up-to-date scientific equipment. According to the Spanish philosopher and statesman Salvador de Madariaga: "The problem of disarmament is not the problem of disarmament. It is really the problem of the organization of the World Community."

One of the major arguments in favor of disarmament is that it would lift the burdens which now weigh so heavily upon the economies of nations. A universal inspection system, even if it were feasible, would be a tremendously costly undertaking. This fact alone should not, of course, detract from the manifold blessings of disarmament. It should, however, serve to caution those who accept unquestioningly Khrushchev's picture of the plethora of material happiness and economic well-being which would automatically attend any disarmament scheme.

Can the Soviets Accept a Bona Fide Inspection System?

All attempts, since 1948, at achieving agreement on an enforceable disarmament scheme have foundered on the Soviets' refusal to assent to any viable system of inspection.

The Soviets have refused to accept inspection for the same reason that they have refused to cease their jamming of foreign broadcasts beamed to Russia and the captive nations. They cannot significantly open Soviet society to the intrusion and

scrutiny of outsiders without endangering the security of the regime and forfeiting important military assets in the global conflict.

Secrecy is a synonym of totalitarianism. A dictatorial regime can maintain itself in power only so long as it is able to insulate its dominion against the spread of "heretical" ideas and as long as it can keep the shutters drawn on windows which might afford its subjects a comparison of their fate with that of others. A "closed society" means just that—closed to the outside world.

The Soviets have monopolized the offensive in the global struggle from their vantage point of a monolithic, closed, secretive society. It is unlikely, to say the least, that they can appreciably open their territory to inspection—let alone scrap their physical power—without denying their ideological heritage, undermining their stability, and thus ceasing to be themselves.

This assertion may draw the now standard objections: Khrushchev has closed the book on Stalinism; the Soviet regime is "mellowing"; Soviet society is in an "era of transition." No one can deny that there have been changes in the Soviet Union—no society is completely static. But the import of "changes" in Russia has yet to be assessed. Suffice it to say that "liberalization" cannot be measured by the number of political prisoners released, by the bulk of tourist visas stamped by *Intourist*, or by the sale of *Amerika* at Soviet newsstands. There are limits to liberalization—limits of which Premier Khrushchev is perfectly aware. Whatever "changes" take place in Soviet society are ordained at the top: they cannot be exposed to external influences without endangering the very existence of the ruling hierarchy.

In short, so long as dictatorship endures in the Soviet Union, the Soviets cannot agree to broad inspection, because it would dangerously undermine the stability of the system—especially a system in transition. If, on the other hand, a truly democratic

government would appear by some miracle in Russia, the utility of an inspection system would be considerably reduced because, presumably, such a government would not be aggressive. There is no middle solution.

Under present circumstances, what kind of inspection system are the Soviets likely to accept? Premier Khrushchev gave a clue to Soviet intentions in his speech to the United Nations when he differentiated between bona fide inspection functions and those which served as a cover for "intelligence activities." We can infer from this that, presumably, the Soviets might allow, on a *quid pro quo* basis, visits to some selected installations which they might otherwise keep closed. Presumably, also, they would admit only inspection teams not staffed by "intelligence agents"—i.e., representatives of the Western powers. While such "concessions" might suffice in the eyes of those who want disarmament—real or symbolic, general or partial—at any cost, they would hardly provide the minimum conditions on which a viable, self-enforcing arrangement must be based.

Can the Soviets Disarm Without Abandoning Political Control of Their Empire?

Despite the fact that some of the satellites are not effectively occupied by Soviet forces, the Soviet Union maintains its power in Central Europe largely by military means. Since it is extremely difficult to overthrow a well-armed dictatorship, especially one supported from the outside, it could be argued that, despite the Hungarian example, Communism can maintain itself in these states (except probably East Germany) even after Soviet troop withdrawal. The situation might be somewhat different if it were made clear that the Soviet military forces would not return. Moreover, the way in which this withdrawal would be brought about matters considerably. On balance, it can be said that the Soviets probably estimate that their military presence in at least some of the satellite countries, as well as military access to

Central Europe, is an indispensable element of their rule over these nations, as well as a key factor in their over-all strategic position.

A mere *reduction* in the size of Soviet forces need not seriously weaken the Soviet grip on Central Europe. This depends in part on what type of forces they would retain. To the extent that, qualitatively as well as quantitatively, Soviet military strength really would be reduced and limited as to its deployment possibilities, the Soviet position in Central Europe would be weakened.

Khrushchev, in his proposal, was careful to draw the distinction between "armies, navies, and air forces," which would be disbanded, and "police" or "militia," which, presumably, would not. This distinction is a plausible one in the Western world in which, traditionally, policemen have patrolled the streets and soldiers have waged battle. The Western nations, with the possible exception of Hitler's Germany and its *Waffen* SS, have little experience in the potential of dual-purpose paramilitary forces.

In a totalitarian society, by contrast, military and police functions are merged inseparably. An important function of Red Army units and satellite military forces in Central Europe has been imperial control. Conversely, so-called "police" organizations in the Soviet Union have a distinctly military character. The MVD, for example, commands units armed with all the paraphernalia of conventional warfare. In the event of formal disarmament, Moscow could easily assign to "militias" the policing duties now carried out by Red Army and satellite forces.

Disarmament, therefore, may not necessarily mean the dissolution of the Soviet empire. But the hope that the Soviets, acting on this assumption, will agree to effective disarmament measures is fanciful. Moscow will not pay an excessive price for disarmament, and the very *possibility* that Communism in Central Europe will be eliminated would be an excessive price for the Soviets.

*Would the Soviets, by Sacrificing Their Armies, Forfeit
Their Hegemonical Ambitions?*

The Soviets are masters at magnifying the psychological impact of physical power. Their unquestioned superiority in armed manpower has provided Communist conflict strategy and diplomacy with a formidable backstop. The Soviets, in Berlin and elsewhere, are leading through Western weakness—specifically weakness in conventional forces. So long as Communist gambits, such as the one in Berlin, compel the Western powers to contemplate the painful choice between all-out nuclear war and limited defeat, for just that long will Moscow be able to drive its psychological advantage home.

It is unlikely, to say the least, that the Soviets are ready to scrap this advantage in the interest of peace and universal well-being. Partial disarmament, incidentally, would not deprive them of this advantage. Power is relative, but its impact is absolute. If there were a proportionate cut in the conventional military might of the Soviet Union and that of its neighbors, Soviet power would still assert itself as before and the security problem confronting the Free World would be essentially unchanged.

But let us assume that the Soviets were willing to forego this advantage and accept total disarmament. Formal disarmament does not hold the same meaning for Soviet policy-makers that it does for their opposites in the West. It does not for the simple reason that, while the West views conflict as the confrontation of organized military power, the Communist weapons spectrum scales the entire range of revolutionary conflict techniques. In this spectrum, conflict waged by irregular or "unconventional" forces—fifth columns and guerrillas—is assigned the same, if not greater, importance than that attached to massed armies and the launching pads of nuclear destruction. Indeed, since World War II, it is these conflict techniques which the Communists have used with almost unqualified success—in Central Europe, South Asia, and the Middle East. The Korean War was the only encounter which could be classed as a formal military conflict—

and even this engagement abounded in such "unconventional" techniques as the use of proxies and "volunteers." No system of inspection and control could be devised which could conceivably ferret out every infiltrator, guerrilla band, or arms cache.

The argument could be raised that these considerations are extraneous to the central issue of disarmament: the Soviets enjoy this advantage today; why should they not continue to enjoy it if and when formal disarmament is implemented?

This argument overlooks some obvious facts. The West's military power, while it has not succeeded in halting the Communist machine of irregular conflict, has managed to brake it somewhat. It has done so in two ways. First, America's strategic power has forced the Communist conflict managers to proceed with circumspection in some areas, notably in Europe; the Soviets cannot be certain that any aggressive moves, no matter in what guise, in areas vital to American interests might not trigger America's strategic retaliation. Secondly, in those regions outside the West's immediate security zone, the so-called "gray areas," the build-up, with Western assistance, of local military and constabulary forces has raised considerably the security and morale of nations which would otherwise be an easy prey for diverse forms of Communist attack. Laos is a case in point. Were the American presence removed and were these local armies to be dissolved or even reduced, Communism's irregular warriors—its guerrilla bands and local party formations—could proceed virtually unchallenged.

Formal disarmament, therefore, would not halt Communist expansion. Indeed, it would widen immensely a battlefield in which the Communists are proven masters.

*Can We Rely on the Soviet Union to Observe
a Disarmament Agreement?*

This is the crucial question. Amid the euphoria which attended Premier Khrushchev's tour through the United States [in 1959], one central fact was generally neglected: According

to all criteria of responsible government, Nikita S. Khrushchev is not the legitimate head of a legitimate government. Bolshevism ascended to power in Russia through violence. There is no orderly transfer of government in the Soviet Union—only a ruthless power struggle in which the victor is free—and, indeed, in the nature of the struggle, almost obliged—to scuttle the policies of his predecessors or vanquished opponent. Thus, Stalin stepped to power over the dead Lenin and the exiled Trotsky and substituted the goal of “socialism in one country” for the objective of immediate and global revolution. Thus, also, Khrushchev stepped to power over the dead Stalin, the murdered Beria, and the purged Molotov, Malenkov, and Kaganovich, and broke with the policies of the once “beloved” Soviet leader and “infallible” Communist theoretician, Comrade Stalin.

There is no guarantee that, even if Khrushchev is sincere, his successor will not disavow his policies and his commitments; indeed, Soviet precedent tells us that Khrushchev's heir, in order to emasculate the entourage of his departed or purged predecessor and to affirm his devotion to Communist orthodoxy, is likely to denounce a disarmament agreement concluded by his predecessor. Should then the Soviets decide to rearm, a mere inspection system will not prevent them from rescinding existing agreements. The inertia of the democracies, so vividly illustrated by their lethargy in the face of Hitler's unilateral scrapping of the Versailles Treaty, will make it extremely difficult, to say the least, to counter Communist rearmament.

In sum, the key to the problem of rearmament is the nature of the political systems that are parties to a disarmament agreement. The democracies can be relied upon to observe such an agreement, if only because their peoples abhor conflict and crave relief from the arms burden and, more important still, because they can compel their governments to comply with popular wishes and the agreements concluded in their name. No doubt, the Russian masses share the Western peoples' aversion to war and arming for war. Yet, they cannot force *their* leaders

to comply with *their* wishes. And even if they had the power to force their leaders to lend a more willing ear to their desires, they lack the considerable information on the issues of war and peace which is available to every citizen of Western democracy.

The West cannot gamble its security on a disarmament agreement until it faces across the conference table men who represent an open political system, are responsive to the popular will, and have forsworn aggression. A disarmament agreement, like any other covenant, must be based on mutual confidence.

17. The United Nations and Arms Control

By LINCOLN P. BLOOMFIELD

Mr. Bloomfield believes that it is possible for the United Nations to play a greater role in arms-control efforts than it has in the past. Acknowledging that an actual arms agreement can result only from a changed political environment and that preliminary decisions will have to be bilateral, he says the U.N. does provide "an alternative means of negotiation," and a medium for enlisting the talents of the smaller powers. The small powers, he says, would be more likely to come up with an "objective" plan that would deny "any strategic or tactical advantage" either to the United States and its allies or to the Communist bloc. Further, he points out, the U.N. has the machinery for implementing the inspection and control provisions of any agreement.

The United Nations and U.S. Foreign Policy (Boston: Little, Brown & Co., 1960), pp. 94-101. Copyright 1960, The Massachusetts Institute of Technology. Reprinted with the permission of the author and the publisher. Subheads added. Some footnotes omitted.

WHILE in its initial stage, the problem of arms control is essentially bilateral and, consequently, the United Nations has only marginal uses in that stage—the organization can supply useful means of negotiation; perhaps more importantly, it can act as a source of international pressure on the determinative powers to reach an agreement, in part by its capacity to develop impartial proposals; and it is the obvious framework for implementing an agreement.

The Russians boycotted the U.N. Disarmament Commission until their demand for parity in representation with the Western alliance was met by the device of making the Commission representative of the total U.N. membership. The parity theme poses difficult problems for the West, chiefly because of the derangement it implies across the board in multilateral diplomatic activity; but parity was soon granted in the form of a ten-nation group on disarmament established outside the United Nations by the Big Four Foreign Ministers in August of 1959. This, in turn, gave way again to U.N. debate after the Russian walkout from the 1960 Geneva talks.

But where and how agreement is reached is of no particular consequence so long as the nations now possessing or most likely to possess nuclear capabilities are involved in the proceedings. More to the point is that a bilateral or even ten-nation

agreement will still leave the Nth-country problem—the problem of other countries that have already developed or are on the verge of developing nuclear capabilities. By definition, the problem here becomes multilateral, and a wide multilateral forum would be the only appropriate basis for extending the agreement to all countries and binding them by it.

The Value of Small-Power Initiative

. . . Even if positive motivation exists on both sides for an agreement limiting weapons or means of surprise attack, it will still be necessary to overcome the built-in tendency of those responsible for military security on both sides to seek a net advantage in any agreement. The most obvious illustration is the Soviet Union's earlier insistence on "nuclear disarmament" without significantly affecting Russian conventional armed strength. One can also cite the equally long-time insistence of American military leaders on a high degree of access to the interior of the Soviet Union. It is difficult to see how any agreement involving inspection would not, by its very nature, reveal more to us than to the Russians, and there is no way we can avoid or minimize the necessity of some form of inspection that is bound to have this effect. But because of the frame of mind the protracted negotiations have created on both sides, it might be instructive to turn to the middle and small powers in the United Nations and charge them with developing a disarmament plan to be considered by both sides, rather than continuing to have such plans developed exclusively by the chief antagonists. Such a plan might have the virtue of being objective in the sense of denying any strategic or tactical advantage to either side. Certainly, it would be easy enough to discover if it afforded any net disadvantage.

Human nature being what it is, perhaps the situation has to become significantly more dangerous before we—or the Russians

—could accept such a neutral proposal. As *The Economist* wryly—and sagely—remarked after the abortive disarmament talks in 1957, “The main lesson of the summer seems to be that there is still not enough fear about.” Still, it might turn out to be the only way to surmount the inherent obstacle to agreement, assuming that other conditions were propitious. Logically, we should welcome such third-party initiative in suggesting a fair and workable program under the aegis of the United Nations.

The uses of the United Nations seem even more decisive when it comes to the point of implementing whatever initial strategic decision the great powers are able to reach. At the root of its value is the need that will arise for an agency or system of agencies to police such an agreement.

The heart of the American position is the need for adequate inspection to ensure that clandestine violations do not go unremarked. If genuine negotiations are limited to the problem of surprise attack, inspection is even more crucial. The possibility exists of Soviet agreement to a limited form of inspection in connection with the cessation of nuclear tests, and one can hope for a progressive breakdown of the Soviet fear of penetration and espionage into the most sensitive installations in the Soviet security system.

Two factors enter planning for a suitable inspection system in the foreseeable future. One is the possible need for the availability of genuine neutrals, particularly if and when Communist China becomes a party to an agreement. The problem of execution may be markedly easier if genuinely impartial neutral nations are available and their nationals utilized to inspect, observe, and report. Since the United Nations is the only organization that includes the neutral nations, it should be the prime agency of implementation of any disarmament agreement. The experience of related U.N. bodies will be of particular value in keeping up with both the technology and administration of control during a period when present possibilities appear to

favor a limited agreement rather than a generalized lowering of military levels, and the problem of hidden stockpiles of nuclear weapons remains untouched.

U.N. Pilot Operations

But it is essential to plan ahead to the situation where a more general agreement becomes a possibility. The International Atomic Energy Agency, despite its disappointingly modest record so far, enjoys, at least on paper, important powers of inspection to ensure that none of the nuclear materials it dispenses are utilized for other than declared purposes. U.N. agreements on the peaceful uses of outer space, however limited, may also include provisions for control and guarantee. It is in the U.S. interest and in the general interest that the United Nations undertake such pilot operations. The combination of technical skills and administrative precedent and experience in both fields, which could be utilized for possible future use in monitoring a system of international control for disarmament and the use of outer space, makes it of vital urgency for the United States to encourage limited U.N. activity toward this end, whether agreements with the Russians are possible now or not. There are grounds for assuming that technical problems, while acute, do not constitute an absolute barrier to adequate inspection. A group of experts commissioned by Columbia University recently reported hopefully on this score: "The main finding of this report is that it is possible to define systems of inspection which would ensure compliance with a wide variety of disarmament agreements."*

The fast-moving changes in the technological picture lead to the second factor in planning an inspection system. This is the prospect, within the present planning period, of by-passing at least some of the problems of penetration on the ground by

* Seymour Melman (Ed.), *Inspection for Disarmament* (New York: Columbia University Press, 1958), p. 54.

utilization of inspection from spacecraft monitoring a disarmament agreement. . . .

All logic points to the operation of such a system by the United Nations, rather than by individual parties to such an agreement. The U-2-plane episode in the spring of 1960 bespoke the dangers of unilateral inspection attempts. The evidence is still scanty as to the political acceptability of an international system of inspection from spacecraft, although Soviet scientists joined [in July, 1959] in recommending to the three-power Geneva conference regarding cessation of nuclear testing that satellites police a test ban from outer space. The overwhelming rightness of the course proposed should continue to commend it to Western planning, regardless of the variations in Soviet responsiveness at any given time.

A further use of the United Nations arises from the nature of the armaments problem when viewed apart from the confrontation of the superpowers.

Regional Arms-Control Plans

In the Western European Union agreement, a means has been found to limit West German arms production by assimilating it in a system of regional cooperation. From time to time, proposals have been made to limit the inflow of arms into the Near and Middle East. An opportunity existed for a time in late 1956 to try at least for agreement on the basis of language contained in the U.N. Assembly resolution on Suez asking states to "refrain from introducing military goods in the area of hostilities." Potential problems of implementation were difficult, and they became temporarily insuperable in the light of Western commitments to supply arms to Lebanon, Jordan, Iraq, Iran, and Turkey. The dual objectives of stabilizing the area by keeping new arms races from developing and of erecting a framework to contain the Communist arms shipments were, in fact, vital ones. In early 1957, the Soviet Foreign Minister proposed agreement on ban-

ning arms shipments to the Middle East. But even assuming he meant it, it would have required an initiative and a change of policy on our own part to achieve the desired end, and the forces of inertia were too great to overcome.

The possibility should be reconsidered, at a time when the Palestine area is *not* aflame, for an agreement limiting the inflow of arms to the most sensitive area in the region—Israel and its immediate neighbors. If it would be impossible to apply it to the region as a whole, there is a basis in the Palestine Armistice Agreements for regarding the parties thereto as under a special international mandate to refrain from warlike acts, including excessive arming. Those, like Saudi Arabia and Iraq, who were not parties to the Armistice, could logically be assimilated for this purpose.

Ideally, such an agreement would be reached on a voluntary basis by the parties concerned, with a U.N. resolution underwriting it and providing appropriate facilities for inspection. Such a program might be urged on the parties by the United Nations, accompanied by the implicit guarantee of security and borders contained in the Charter. But the Arabs at this time are not likely to bind themselves to accepting Israel's current borders, and the likelihood of voluntary acceptance by any of the parties is remote. There remains, however, a third and more realistic possibility—a self-restraining ordinance by the great powers, bilaterally or quadrilaterally arrived at, and a suitable ratification passed by the U.N. Assembly bringing all others into the agreement and possibly containing provisions for inspection of compliance by U.N. instrumentalities. The proposal for such an arrangement might well be a serious element in any Western negotiating package with the Soviet Union.

The same logic can be applied to the situation in Africa. One writer recently spelled out a proposal for a U.N. convention guaranteeing the African area against aggression and imposing a moratorium on the shipment of all arms other than those

required to maintain internal order.* Such a moratorium could greatly facilitate African internal development and insulate it against potentially disastrous local arms races. Again, the best route to a U.N.-sponsored agreement would be, in the first instance, a great-power agreement. Only an excessive sense of fatalism need prevent us from seeking serious negotiations along these lines as part of our policy objectives in a potential East-West détente.

Conclusion

With the understanding that, in the first instance, the general disarmament problem depends on the political environment and that the preliminary decisions are bilateral in nature, the United Nations supplies an alternative means of negotiation, a way of involving and using the talents of other nations who share concern with the problem, a source of international pressure on the great powers, and an agency for implementing agreements reached. To resolve the Nth-country problem, the final negotiations must be multilateral, including, in some form, the Communist Chinese. Given the built-in proclivity of the parties to seek advantage for themselves, it would be worth at least experimenting with having the small and medium powers in the United Nations draw up disarmament proposals with the thought that they might be more objectively conceived and thus more likely to secure mutual agreement.

The United Nations is the appropriate agency for implementing an agreement, first because of the availability of neutrals, second because of the technical possibility of monitoring agreements from orbiting observation satellites in the not-too-distant future, satellites that logically should operate under interna-

* Arnold Rivkin, "Arms for Africa," *Foreign Affairs* (October, 1959). For another regional approach to limitation of armaments, see Chile's initiative in 1960 to convene a Latin-American conference on reducing regional arms spending.

tional auspices. U.N. experience with limited controls and safeguards in the peaceful uses of atomic energy and, hopefully, of outer space, can supply valuable pilot models toward more comprehensive agreements.

Great-power agreement should be sought on a priority basis to limit the inflow of arms into the Palestine area, and also the continent of Africa. Such regional arms stabilization should be suitably guaranteed and inspected by an appropriate U.N. agency.

18. Beyond Arms Control

By LAURENCE W. MARTIN

What would be the shape of international politics in a disarmed world? Would the Communist bloc or the West benefit more by substantial arms cuts? In this essay, a political scientist deals with some of the military and political problems that would beset a disarmed world.

He maintains that disarmament would not end the Cold War or erase other tensions among nations. Any international security force designed to police a disarmed world, says Mr. Martin, would be subject to the danger of weakness and inaction on the one hand and the danger of tyranny on the other.

Since it has been widely assumed that a disarmed world would automatically be a better world than an armed one, little serious research has been done on the problems "beyond arms control." Only recently has a small beginning been made in the United States. There is little evidence to suggest that a similar beginning has been made in the Soviet Union.

"Beyond Arms Control," *The Christian Science Monitor*, June 2, 1961, p. 13. Reprinted with the permission of the author and the publisher.

IN the past, those who have demanded that political questions be settled before getting on with disarmament have usually been referring to particular, existing disputes. The arms race, it has been suggested, is a symptom of political tension and the solution of political questions is therefore necessary to produce a favorable climate for negotiation on disarmament.

This attitude has rightly been regarded as defeatist both by idealistic advocates of disarmament and by the hardheaded military experts who see that today's arms race has a momentum of its own which makes it a primary disturbing element in the world. For it is impossible to conceive of settlements which remove all sources of dispute and thus the time for disarmament can never arrive. In reality, many international disputes must carry over into a disarmed world and new ones will continually arise. Thus the true problem is to find ways of handling them.

Therefore, we need to foresee, so far as possible, the pattern of international politics in a disarmed world and to plan how to defend our interest in it. Although we have been neglecting this problem, recent events have clearly pointed it out.

Disarmament Would Not End the Cold War

We cannot assume that even total disarmament would bring an end to the cold war. The Communists—and we are dealing

with the Chinese as well as the Soviets—have emphasized that changes in their tactics do not affect their ultimate goal of domination in the slightest. In his recent pronouncements, Mr. Khrushchev has, in fact, justified a reduced reliance on military methods by stressing the opportunities for advance by other techniques. To the extent that Soviet and Chinese aggressiveness may be based on fear and memories of past vulnerability, disarmament might possibly reduce their drive. But we cannot count on this in our present planning.

Nor is it reasonable to expect diplomatic issues distinct from Communist aggression to disappear. A number of unstable situations may be expected from the difficulty the Soviets and Chinese themselves will face in holding down Eastern Europe and Tibet if armed forces are reduced to anything reasonably describable as internal security forces.

The unification of the divided countries of Germany, Korea, and Vietnam may remain as a problem. Such conflicts as the Arab-Israeli quarrel and any unresolved colonial situations will persist and, in the longer run, there will be as yet uncrystallized conflicts, possibly economic in nature, with the lines drawn between haves and have-nots, disputes on trade and natural resources.

The Problem of Sub-Conventional Warfare

The Communists are masters of struggle by nonmilitary and quasimilitary means. They have made full play with propaganda, subversion, conspiracy, infiltration, and minor, sponsored wars which are ostensibly civil. In his declarations on the desirability of abolishing war, Mr. Khrushchev has made an explicit exception of wars of national liberation and these are a favorite cover for Communist maneuvers. All too frequently, as in Laos, Vietnam—and perhaps Cuba?—the West has been forced to meet such subtle Communist moves by military action which has been

much more overt and would therefore be difficult, if not impossible, to sustain under a system of disarmament.

Were total disarmament to deprive the West of this ability for direct action, the Communists would very probably increase the scale of their nibbling attacks, the more so as the fear of provoking massive American retaliation would also be removed. This might happen immediately, or it might follow a lull during which the system of disarmament was firmly established.

Twin Dangers of an International Police Force

Many proposals for general disarmament make provision for an international security force. For the most part, this force is intended to prevent rearmament rather than to regulate the struggles which could be carried on without rearming, but the idea can be applied to the wider problem.

There are, however, two paradoxical dangers inherent in an international force. The first is that it might prove overactive in ways distasteful to us; the second that it might be inactive in cases when we want action.

Because it is impossible to make exact rules for all contingencies, some discretion must be left to whatever body controls the international force. Such a body would have the character of a world government on questions where the force operated. When we recall the expanding role of the federal government or the way in which the General Assembly of the U.N. has extended its power of recommendation, it is easy to imagine an increasing range of activities for the world force. It might not be easy to prevent the force itself setting up as a tyranny.

It is much more reasonable to imagine it being used by a bloc of nations, perhaps the poorer nations, led by Moscow to act against Western interests, even, conceivably, to enforce redistribution of world resources and wealth. In other words, we are face to face with the timeworn question of domestic jurisdiction under far more serious circumstances than ever before.

The obvious remedy of providing for a veto immediately shows the complexity of the problem. A veto is a two-edged sword and if we have one, the Soviets will, too. Thus the remedy for overzealousness by a world majority may entail a stalemate on all issues.

The usual notion, as in the U.N. system, is to demand action when a situation constitutes a "threat to the peace." At present, the occasional willingness of neutrals to see a threat to the peace probably arises largely from fear that, if a situation is not dealt with, one of the great powers will be provoked into direct action that might involve the world in a disastrous war. But in a disarmed world such a possibility will seem remote. Indeed, "threats to the peace" could no longer exist in the accepted sense.

It is true that neutrals might be more willing to act when fear of world war is removed. But it seems equally, or more likely, to be true that disinclination to incur expense and get involved in the Cold War would increase reluctance to take sides once the fear of major war had gone.

This may be too gloomy a view, but at least it is plausible enough to deserve attention in our planning. The problem is first to foresee, so far as possible, the pattern of politics in a disarmed world and then to provide for the role of American policy in it. This is a tall order and one can only begin to discern the outlines of a solution.

Three Approaches Toward a Solution

Such a solution is very likely to fall into three parts: first, efforts to improve our own capacity, with our allies, to resist communism unilaterally; second, efforts to design adequate international procedures; third, efforts to influence the political climate of the disarmed world.

In the first category would fall the new methods of exerting

power envisaged by President Kennedy in his plans for special forces. The plans for these forces should, therefore, make provision for possible use after disarmament agreements are in effect, always remembering, of course, the need not to risk destroying an arms-control agreement that we would presumably have thought worth having.

In the same category are additions and modifications to our propaganda efforts, our aid programs, our Peace Corps, and, indeed, all the methods of nonmilitary campaigning which are already increasingly coming to the fore.

Under the heading of international machinery would come all the constitutional arrangements for an international force and the bodies to run it. Experience with constitution-making in the newly independent countries has shown the desirability of settling many questions of method and procedure, while the common desire to get agreement still remains an incentive to accommodation and concession. It will be as important for the neutrals to commit themselves as the Communists.

But no code or constitution can ultimately perform what there is no political will to do. This is why the third set of considerations, concerned with the political climate, will be so important. In the last analysis, these boil down to some commonplaces of the Cold War. The best defense against subversion is vigorously independent nations which will neither fall a prey themselves nor fail to support international action in the case of those that do.

In the struggle for the poorer nations, the Communists have assets in their reputation for radicalism and devotion to planning. But we have a massive advantage ourselves in that our interest in the freedom of nations from Soviet or Chinese domination may be expected to coincide with their interests and those of their leaders. This may even yet prove true in Cuba as it has in Yugoslavia, Egypt, and possibly Iraq and the Congo.

19. Negotiation and Agreement

By THOMAS C. SCHELLING and MORTON H. HALPERIN

Arms control always involves some form of "collaborative action" between two adversaries. With this premise, the authors maintain that the United States and the Soviet Union are constantly bargaining, negotiating, and maneuvering with one another even if there are no formal diplomatic talks in progress.

In this essay, Mr. Schelling and Mr. Halperin examine various kinds of "understandings" between hostile powers which involve "mutual restraint." They emphasize the many ways by which we communicate with a potential enemy. Formal arms-control negotiations, they point out, are unusually complex because they involve political, strategic, and technical judgment of a high order. Under certain circumstances, they believe that secret negotiations and agreements are necessary and desirable.

Strategy and Arms Control (New York: Twentieth Century Fund, 1961), pp. 77-86. Reprinted with the permission of the authors and the publisher.

ARMS control is customarily thought of as entailing formal agreements, negotiated in detail at diplomatic conferences, embodied in a treaty, and with machinery or institutions for monitoring the agreement. But a more variegated and flexible concept of arms control is necessary—one that recognizes that the degree of formality may range from a formal treaty with detailed specifications, at one end of the scale, through executive agreements, explicit but informal understandings, tacit understandings, to self-restraint that is consciously contingent on each other's behavior.

Formal Versus Informal Understandings

The essence of arms control is some kind of mutual restraint, collaborative action, or exchange of facilities between potential enemies in the interest of reducing the likelihood of war, the scope of war if it occurs, or its consequences. It is an important tactical question whether the most promising approach to arms control is to seek formal treaties, informal agreements, tacit understandings, or just mutual self-restraint; there are many points of view on this, and much to be said for and against each of them. If a formal agreement helps to identify areas of potential mutual restraint or cooperation, and facilitates under-

standings by which both sides may restrain their actions, it contributes to arms control. But it is not the formal agreement or treaty itself that constitutes arms control; mutual restraints that can be reached without explicit negotiation are no less relevant just because they lack some of the diplomatic trappings.

To emphasize this point, which is far too little appreciated, it may help to recognize that limited war itself is a form of arms control, and one that customarily has not been arrived at by explicit negotiation and formal agreements. A "limited arms race" may not be wholly different in character from limited war, in the sense that it may stem from an appreciation on both sides that there are advantages in abstaining from certain unilateral military actions as long as the other does too, and that these can often be perceived, and limits arrived at, without benefit of full communication and overtly acknowledged agreement. As already indicated, there are many unilateral military actions that both we and the Soviets abstain from at the present time, out of what must certainly be a recognition that the game is dangerous if both play it, and both can play the game; most of these "traffic rules" and rules of privacy are quite informal.

But the fact that understandings can be quite informal, and that this possibility deserves emphasis, does not imply that they are necessarily preferable when the alternative of a formal agreement is open.

To some extent, the formality of the understanding reached will depend on the contents of the understanding. It may take no formal instrument at all to support an understanding to abstain from certain blatant kinds of mischief; it is bound to require a formal undertaking if each side grants, say, real estate and privileged personnel to the other, and shares some of the costs. In general, exchanges of facilities, or the undertaking of activity on each other's soil, or the sharing of costs, require formal agreements and institutions, and might be called "positive" or "active" arms control. The more "passive" kind, involved in simply abstaining from certain activities, or in noninterference

with the other side's surveillance or intelligence activities, may possibly benefit from explicit understandings but does not necessarily require them. Again, restraints and traffic rules and understandings that have evolved over time and have become "traditions" perhaps need no formal expression, and may sometimes even be demoralized by efforts to reduce them to detailed and explicit terms; new restraints, or restraints in the conduct of a novel activity, may lack the benefit of tradition and require a more expeditious means of reaching an agreement.

There is undoubtedly some correlation between the comprehensiveness of the arms control that one seeks and the degree of formality appropriate to the negotiations and the agreement. Certainly, a very comprehensive limitation on weapons and their deployment is likely to require a good deal of governmental machinery for its enforcement, inspection, adaptation, and general housekeeping. Undoubtedly, also, arms control that is part of a program to provide alternative ways of settling disputes, to establish a system of world law or of world legislation, especially to create institutions for international enforcement, and to reduce national responsibilities for policing the world against violence, is almost necessarily committed to the creation of formal institutions. Arms control that is more opportunistic or limited in its intent, that seeks to supplement national military policies in directions that are mutually beneficial but that has no ambitious expectations of directly revising national responsibility or of drastically altering the basically national orientation of military or diplomatic policy, does not necessarily involve formal undertakings and formal institutions.

Communicating with the Potential Enemy (Partner)

Even in the case of formal diplomatic negotiation, culminating in a treaty, communicating with the partner (potential enemy) country is a complex matter. In addition to the deliberate formal and informal communications (public and private) coordinated

by the head of government, there is a good deal of activity designed to impress the other side with the firmness of one's own position, the pressures that one is subject to, and the areas in which one is willing to make concessions. Furthermore, especially in a democratic country, there is no single "government" with a single voice; there are separate branches of government, each one of which embodies a variety of unreconciled differences and interests. America speaks to Russia not only through its ambassadors, but through Senators and Congressmen of both parties, through pressure groups and lobbyists, through columnists and scholars. The executive branch itself consists of cabinet members who have strongly different interests, all of whom hold press conferences in which they both deliberately and inadvertently convey some notion of what one should expect this country to agree to, insist on, think of, and propose. We speak, furthermore, not only to the countries we negotiate with, but to allied countries and neutral countries, with intentional or unintentional conveyance to our potential enemies of correct or incorrect notions of what our position is.

Negotiating informal understandings is an even more diffuse activity. In all cases, actions speak loudly, whether or not more loudly than words; to change the defense budget, to go on airborne alert, to switch from fixed-based to mobile missiles, to withdraw troops from particular areas, to sign treaties and to make arrangements with particular countries, are ways of communicating intentions, expectations, values, and commitments to our potential enemies. However formal the negotiations, much of our communication is in the form of our actions, whether we so intend it or not. In very informal communication, especially in the kind of tacit bargaining that goes on continuously between us and the Soviets, actions rather than words may carry even more of the burden. Indirect discourse carries even more of the burden too, and press conferences, inspired leaks, hints to third countries, and so forth, are all part of the communication process.

Consider, for example, how we communicate to the Russians our proposal regarding the use of nuclear weapons in the event of limited war. The way we equip our armed forces and the training they are given are main ways we communicate our intentions to the enemy. The way we deploy nuclear weapons and centralize or decentralize control of nuclear weapons (to the extent that they can be discerned and appreciated by the enemy) are other ways. The statements of executive-branch and Congressional leaders, directed not towards the Soviets, but towards appropriations committees, towards the American public, and towards allied countries are sources of communication with the potential enemy. Even silence is a mode of communication; failure to deny rumors, refusal to answer questions, attempts to take emphasis away from certain issues, all tend to communicate something to the enemy. In some cases, the communication is of reasonably high fidelity; in other cases it is inadvertent but nevertheless revealing or confusing; in other cases it is deliberately confusing; in other cases it may be deliberately deceptive. But all of these actions and statements and inactions and silences convey something to the Soviets about the circumstances in which we would use nuclear weapons, how we would use them, for what purposes, and in what quantities.

Our attitudes towards arms control, and our concrete ideas on the subject of arms control, also get communicated in this variety of ways. Our "negotiations" with the Soviets over the past several years have not been solely those that took place in Geneva, or at the United Nations in New York, or in exchanges of letters between Presidents and Premiers. Our communications have been of all the sorts mentioned above. Furthermore, there may be a problem of educating the countries with which we may want to reach arms understandings. If, indeed, we have ideas about the kinds of arms control that may be most promising, and about the relation of arms control to our military policy, the problem may be not only one of communicating these ideas as proposals to the Soviets, but also one of showing

the Soviets that these are reasonable ideas, that they correspond to a sensible and logical arms-control conception, that they are sensible enough that we might take them seriously, and that perhaps they should too. In other words, persuasion may be required; and the channels of persuasion may include a number of informal and unofficial media. In order to do this successfully we need to know a great deal more than we now do about Soviet attitudes towards arms control, their perception of American intentions, and their negotiating methods.

Modes of Negotiation

Techniques of negotiation in the field of arms control deserve imaginative study. Negotiating with an actual or potential enemy on important security measures is not quite the same as negotiating trade agreements, diplomatic immunities, or even political settlements. For one thing, military secrecy is importantly involved; a nation is understandably reluctant, for example, in opening negotiations on schemes to discourage surprise attack, to identify for the enemy precisely those points at which it is most vulnerable. Second, in military intelligence, a special kind of secrecy problem is also involved; arms arrangements and even discussions of arms arrangements impinge on varieties of clandestine activities that the participants engage in, and many forms of arms control are directly related to gaps in the participants' military intelligence of each other. Third, extraordinarily complicated technical military and engineering problems are likely to be critically involved in any arms negotiation; and while it is undoubtedly true that political settlements, tax arrangements, status-of-forces agreements, and international monetary arrangements involve intricate technical questions, it is probably a fair observation that arms negotiations involve more, or at least involve technical problems of the kind that are less familiar to professional diplomats and negotiators. It is probably also true that the essential technical information in the

military field changes more rapidly, and is therefore much more difficult to keep up to date, than most political and economic data.

Finally, any serious arms arrangement would involve matters of extreme importance to governments; and while arms control is not unique in its involvement of vital national considerations, it at least occupies the same end of the scale with political negotiations of the highest importance, so that the cost involved in mismanagement, in lost opportunities, in inadvertent commitments, or in agreements mistakenly arrived at, cannot readily be taken in stride as just ordinary ups and downs of international diplomacy. This is vital business.

The problem of coordinating expert military and engineering judgment with diplomatic negotiation is therefore more difficult, and undoubtedly more important, than the problem of incorporating expert industrial and engineering judgment in negotiations on, say, commodity stabilization. Evidence of the importance of this problem, and of the fact that it has not been adequately solved, is in the attempts, not altogether successful, of distinguishing between "technical discussion" and "political negotiations" in the test-ban and surprise-attack negotiations of the last few years. Whatever the value of the so-called "technical discussions," it is perfectly clear that their meaning and their purpose were not a matter of full agreement and common understanding between East and West. And it is almost as clear that, whatever the value of drawing a line between technical and political exchanges, the line is not an easy one to draw even with the best of intentions.

Other negotiating techniques may deserve further study, too. The role of mediators, for example, deserves to be carefully considered. It is evidently true in the field of arms control, as in almost any other field, that an agreement could be crystallized, or a compromise acknowledged by both sides, if only there were some noncommittal way of getting the appropriate proposal

made. Often each side is afraid of making a concession for fear that the other will expect capitulation. Often each side finds it politically embarrassing to be the first to back down. Often one or both sides would acquiesce in an agreement if the agreement did not seem to correspond too closely to the other side's latest favorite position. In these circumstances, the mediator or conciliator who exercises a power of suggestion, and who has the ability to take responsibility for proposals that neither of the main participants can bring himself to make, can perform an important service. At least this is true of those cases in which a tenuous agreement exists *de facto*, and can be strengthened by some process of acknowledgment. Even the mere assertion of a statement of affairs by a skilled mediator can, through the absence of overt contradiction by the main participants, create a feeling that the matter is settled. At least this may be true of those forms of arms control that involve simple understandings of how to abstain from certain actions, rather than elaborate schedules and procedures for collaboration. Perhaps the main participants, the U.S. and the U.S.S.R., can even profitably cultivate certain mediators in the field of arms control. This might be particularly relevant to those forms of arms control that involve important, but not quite vital, issues.

Other techniques of negotiation, ranging from "summit" conferences and U.N. debates to the use of interviews by journalists, deserve to be considered. What is particularly important to keep in mind is that the significance of any of these modes of negotiation is not to be judged solely by the signed or ratified document that may emerge to record an explicit agreement, but also by whether certain rules, restraints, traditions, better understandings, or cooperative actions result from the negotiations, even in the absence of any formal success embodied in official documents. Understandings reached, bargains struck, inhibitions created, and agreements crystallized—as apparent by-products of negotiations—may well be more important than the particular agreement that is reached or not reached in the formal negotiations.

Publicity and Secrecy

A special aspect of negotiation, and even of the understandings reached, is the matter of secrecy or publicity. Perhaps "privacy" vs. publicity is a better expression in some cases. Certainly, there may be advantages in reducing the propaganda significance of negotiations, by prior agreement on privacy, on not making a record of negotiations public, on not holding separate press conferences to give away one's own view of what is going on. There is also the important possibility that the main participants in arms-control negotiations are embarrassed and inhibited by the presence of allied countries or countries to which they have military commitments. Secrecy may eliminate some of the obstacles to plain speaking and to drastic proposals. Secrecy may also be involved in negotiating matters that one or both participants prefer not to acknowledge in public.

Finally, there is the possibility of secret agreements, as well as of secret negotiations. Agreements, for example, regarding the conduct of clandestine intelligence, or the cessation of intrusions, spoofing activity, harassment, and so forth might have to be secret only because the matters discussed are usually not openly acknowledged. If our definition of arms controls is broad enough to include all the possible forms of military collaboration between the United States and its main enemies, there may well be understandings reached, or even explicit agreements, that must be kept from certain other countries. For example, agreements about preventing the spread of weapon technology, or even of nuclear weapons, or agreements involving delicate political settlements, might well have to remain secret. The peculiar status of relations between the U.S.S.R. and China is a potent reminder that we are not the only major country that may occasionally wish to be less than wholly candid with its allies.

20. Hiders and Finders: An Approach to Inspection and Evasion

By AMROM H. KATZ

The problem of policing any future international arms-control agreement is an extremely complex one. There has been a great deal of writing on this subject, but most of it has been theoretical. This is understandable because there is no approximate historical precedent to go on. In this essay, Mr. Katz proposes that the United States undertake an extensive field experiment within the country to learn more than we know now about detecting evasion. The experiment would utilize "sizable military forces" and draw upon knowledge gained through aerial reconnaissance during and since World War II. Implicit in his proposal is the assumption that the would-be hider (evader) has an easier job technically and psychologically than the would-be finder. He maintains that the United States and the Soviet Union have a mutual interest in developing adequate means to detect cheating.

Adapted by the author from a memorandum prepared for the U.S. Disarmament Administration, April, 1961. Reprinted with the permission of the author.

MANY disarmament and arms-control proposals have been made; many more will be made. Some form of inspection has been part of those past proposals; some form of inspection will likely be advanced as an integral and essential part of any new proposal.

Of all the kinds of inspection technology which have ever been proposed or even discussed—inspection by aerial reconnaissance, ground inspection, factory or production inspection, “psychological” inspection, seismic inspection, budgetary inspection—the one technique we have had the most experience with and that we know far and away the most about is aerial reconnaissance.

The resemblance between wartime reconnaissance and the special kind of peacetime reconnaissance embodied in an inspection agreement is, in many respects, superficial. It is certainly true that all of our experience with wartime reconnaissance—problems of camouflage, problems of daily surveillance of front-line areas, problems of photo interpretation, and the expeditious handling of large quantities of data—have *some* carry-over value for the novel tasks of peacetime surveillance of huge areas, the monitoring of activities, and many of the numerous other activities (many of which are not yet understood) which are to

be subsumed under any inspection agreement, but much more needs to be done.

The wartime experience of the early 1940's is as far distant from today's problems as the discussions of World War I reconnaissance were in those same early 1940's!

Given my premise—that any general arms-control agreement will involve inspection, that the most prominent and well understood inspection technique is aerial reconnaissance, and that even for this technique we cannot answer questions about proposed applications with confidence—it is clear that we have a great deal of homework to do. What is true of aerial reconnaissance is even more true of the other techniques about which we know much less.

Preference for Hiding over Finding

Conversations about the hiding-finding problem with groups of people at The RAND Corporation, in the U.S. Air Force, and elsewhere have turned up an overwhelming preference for hiding over finding. There seems to be an *a priori* assessment that hiding is easier than finding. (I have called this proposal "Hiders and Finders." Many people seem to prefer "Hiders and Seekers." I dissent from this on the grounds that the more properly parallel term to "hiding" is "finding." "Seeking" implies the process of looking without connoting success!)

I have talked to many groups of people about the general problem of hiding things from the inspector, and the corresponding problem of the inspector finding the hidden things. I invariably ask whether one would rather be a hider or a finder. Although some amateur psychiatrists might ascribe the answer to squirrel and pack-rat impulses deep within the hearts of most people, I cannot believe that the overwhelming preference for hiding stems from such pseudopsychiatric considerations. It usually appears quite obvious to those who have given these matters thought that the hiding of missiles, or bombs, or war-

heads—to take a class of interesting examples—permits one more option than of the finding of them, and people seem to want to play a winning game.

Field Operation Proposed

I propose that studies be undertaken in hiding-and-finding technology which could, and should, yield an “activity,” or field operation, by sizable military forces. I use the term “activity” here in contradistinction to study, library research, or game. Study and library research use paper and produce more paper. The word “game” has gradually come to mean an exercise played in a basement on an electronic computer. Activity here means that sizable groups engage in actual, not simulated, operations, with real equipment—shovels and cameras, as well as missiles and aircraft. I propose to start with aerial reconnaissance, hoping that the study and experimental techniques will yield insight and subsequently permit or stimulate adaptation of these notions to other forms and their inclusion in inspection technology. The kind of activity proposed can be illustrated in this way.

Setting aside, for example, a representative quarter of a million square miles of the U.S. for large-scale inspection maneuvers, we would deploy two teams, A and B, whose aims would be opposite. Team A would have the job of building a missile site secretly, over a specified time period. Team B, insulated from Team A, and limited to certain techniques and level of effort, would have the job of finding and monitoring the activities of Team A. (Mobile missile systems furnish another useful example of important inspectable systems about which we know little, and could profitably be used in this type of exercise.) The utility of camouflage could be explored through this technique. This is only an example, not a complete description of this test.

The proposed study would include the design of the problems to be given Team A, and the allocation of effort allowable to Team B. I have deliberately emphasized the most dramatic as-

pect of inspection—*finding*. Other aspects of inspection can be tested and developed within the proposed framework—checking given data, monitoring, reporting, discovering evasion, and establishing good communication networks. All of these activities require cycling-time studies and considerable understanding of the phenomena under observation.

The notion of “cycling time,” as used above, means that the time between successive observations depends on the phenomenon being observed. If one were watching the progress of a glacier, infrequent observations, at intervals of several years, might well suffice. A period as long as this would be inapplicable to the problem of monitoring, or even detecting, the construction and hiding of a missile site. The phenomenon could come and go between observations. Hence, the requirement to *match* the observation cycle to the cycle of the phenomenon under observation. One doesn’t need slow-motion photography to study the growth of a plant; in fact, quite the opposite is needed—time-lapse, or speeded-up photography is used. The flight of a bullet, or the explosion of a bomb, requires that action be slowed down. In both cases, the interval between successive observations *matches* the pace of the phenomenon.

It is impossible to predict results, but even at this stage, seven good reasons for conducting such field operations emerge:

1. We should find out what we can do and cannot do, so as to not oversell proposed inspection systems.
2. We should find out what we cannot do and be prepared not to do it.
3. We could use this kind of activity to test control systems proposed by others.
4. We could use such operating teams of hidiers and finders to probe agreed-on and operating systems during actual operation—to discover whether switches are on, inspectors are awake, etc. This activity could help develop further technical capabilities.

5. We could use results obtained under these tests to perfect inspection systems, to tighten controls, and to reset tolerances and thresholds of either proposals or systems. We might find out that we could, reliably, detect or monitor activities of a certain kind, which a current proposal or system either did not envision or was incapable of envisioning. Thus, new standards calling for inspection of new activities might be incorporated into treaties and systems, or into proposals. This could lead to the gradual erosion of the uncontrollable and the undetectable, and to the successive broadening of control machinery. Confidence in the control and inspection functions would likely increase, as the fraction of uncontrollable, uninspectable activities decreases.
6. This activity is an ideal vehicle in which to pursue research and development in inspection technology of all kinds.
7. We need to know all this for unilateral activities—both hiding and finding. This last point is important. It should not be thought that the Soviets need always take on the role of hiders and the U.S. always take on the role of finders. We may well discover an interest in, and requirement for, hiding things of ours. This operation could serve to test our ability to hide in the presence of various kinds of “finding” efforts. Although I want to *start* with aerial reconnaissance, there is no reason that this scheme need be limited to aerial reconnaissance. In the event of failure of arms-control or disarmament negotiations, there are things we must be prepared to do unilaterally. Now, for example, in the absence of arms control, we have unilateral information requirements and activities.

It may be argued that learning how to cheat, evade, hide, or to frustrate inspectors, is an unwholesome activity. This is nonsense.

The U.S. scientists who worked hard and imaginatively to discover ways of concealing underground nuclear explosions did

an important job. What is overwhelmingly wrong is that there has not been a sufficient (and successful) research and development effort on the other side of the problem—detection.

We Need a Sound System

We do not need a system which works well against a careless, uninformed, unimaginative opponent, but one which works well against an opponent who is smart, careful, and imaginative.

The large-scale utilization of *hiders* and *finders* which I have suggested has another value completely independent of any inspection agreement. This stems from the fact that the *differences* between inspection and airborne reconnaissance lie not so much in techniques, purposes, methods, and results, as much as they lie in the simple definition that reconnaissance is usually a unilateral activity, and that inspection, as we usually think of it, is something that proceeds as the result of an agreement. If this is true, then all of the exercises that I am proposing here would have a direct value and immediate application for whatever kind of unilateral efforts are required in the event of failure to reach agreement.

What would it take to start this activity? The *hiders* could well be an appropriate U.S. Army group, including, as a sizable portion, the Army engineers. The *finders* could be drawn from a reconnaissance wing of the Tactical Air Command.

Problems of security, of one team *vis-à-vis* the other, are relatively easy, because there already exists a good measure of security between the several services. Each military service tends to guard its special secrets from the other services, and there should be no problem in making motivations and competition real.

Clearly, such an effort requires extensive planning, including the design of observer, security, and evaluation teams.

The utilization and exploitation of the results obtained in early tests to design further tests (or proposals for international agree-

ments) is an example of what an engineer would call "feedback." The notion that we really do not know now all that we will learn is another reason for making the design of future tests dependent on results obtained from earlier tests.

Although studies on paper are necessary to get this activity started, I would anticipate that the major insights will be gained not from two-dimensional paper studies, but from three-dimensional activity—*doing*, not talking.

We need three-dimensional *activity*, followed or accompanied by study and then more *activity*.

This would be a new approach to the problem for us, because we are not now doing this and we ought to. It would certainly demonstrate, to us and to the rest of the world, that we take these problems seriously. We should learn to employ those techniques and technologies better with which we have some experience, as well as learn the rudiments of novel inspection techniques. Novel problems may be attacked by the adaptation of old techniques, or may require new techniques. We must find out.

Suppose we start to carry out a hiders-and-finders experiment on a U.S.-only basis, and we find that it works. It can be extended to a joint NATO activity, and eventually to joint Soviet Union-NATO-Warsaw Pact exercises. But it is premature to propose this idea at the highest level of political-technical complexity before we have tried it and understood it, at the other end, the lowest level of political-technical difficulty—as an internal U.S. operation.

We must show the Soviets why they should be just as interested in inspection and evasion as we are. Understanding this as a proposition of mutual interest is a necessary precondition for possible future success at a higher level of negotiation.

21. Territorial Arms Control: A Proposal

By LOUIS B. SOHN

Western arms-control proposals have stressed the necessity for viable inspection provisions which come into operation when the agreement is effected. The Soviets have objected to all Western control proposals and have called for "general and complete disarmament" first and inspection later. In order to meet the Soviet objection, Mr. Sohn has devised "a compromise solution in which disarmament and controls would go hand in hand." In his phased disarmament scheme, a new slice of territory on each side would be opened to mobile inspection teams for each new time period. In a six-year plan, for example, each year one-sixth of the territory of all parties to the agreement would be opened to impartial inspection.

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BY the end of the 1950's, the Western powers and the Soviet Union had come quite close to agreeing on the goal of general and complete disarmament and on the main components of a disarmament plan. They continue, however, to disagree on the steps which should be taken at various stages to ensure that both sides fulfill their obligations in good faith. In particular, they disagree about both the measures of disarmament and the controls which should be introduced in the all-important first stage.

The Western proposals stress the need for strict controls from the very beginning, while the Soviet proposals envisage limited controls at the beginning, which would grow into full controls only at the end of the disarmament process. The current Western plans envisage reduction by percentages or down to pre-specified numbers of total arms and troops. The Soviets object to the Western proposals for controls because the amount of control envisaged in them is not proportionate to the amount of disarmament, and at the beginning, 90 per cent controls will accompany 10 per cent disarmament. On the other hand, the idea that only limited controls will accompany the crucial early stages of arms reduction is unacceptable to the West.

A compromise would permit disarmament and degree of control to go hand in hand. Each cut in armaments could be ac-

accompanied by the extension of control to a specified part of a nation's territory, proportional to the total arms reduction at each step.

Two types of controls would be distinguished: continuous on-the-spot controls over certain activities or establishments, and unrestricted inspection by mobile inspection teams looking for clandestine activities in violation of the disarmament agreement. The Soviet Union has accepted the principle of fixed control teams at military bases, airfields, ports, launching sites, and factories engaged in the production of missiles, weapons, and fissionable materials. Such controls would be introduced as soon as disarmament steps relating to these establishments would come into effect. The Soviet Union objects to opening all her territory to mobile inspection teams. Rightly or wrongly, she believes that such teams might be used for espionage purposes. Only when all armaments have been abolished and there are no longer any military secrets is she willing to allow complete freedom of inspection. The suggested method of territorial arms control would apply only to the mobile component of the inspection system. It would be in addition to the fixed teams monitoring important military installations and crucial production facilities.

The Soviet Union rejected recent U.S. proposals of aerial inspection and other controls over specified territories of NATO countries and Soviet bloc members on the grounds that these proposals envisaged inspection without disarmament. The objection would not apply to a proposal of simultaneous disarmament and control steps extending gradually over the whole of the country disarming. Similarly, Western objections to Polish disengagement plans are not relevant, as proposals applying equally to all nations would not discriminate against Germany, nor perpetuate Germany's division, and the suggested method of progressive territorial demilitarization would apply equally to all nations. The following proposed method is simplified to show an analysis confined primarily to the U.S. and Soviet Union.

Territorial Method

There are various ways of approaching the question of territorial disarmament and control, and their relative merits need to be considered carefully. The following illustration may be modified as needed.

To simplify the problem, assume that there is an agreement to introduce substantial disarmament and control measures over a six-year period. In such a case, the territories of the U.S. and Soviet Union would be divided into six regions, and each year the disarmament measures and accompanying controls would be introduced to one of these regions. At the end of six years, all the territory of both sides would be covered and there would no longer be any limitations on controls.

Before beginning the first year of arms control, each country would submit to the international control agency two lists, prepared in accordance with an agreed questionnaire. One list would contain an enumeration of all the military installations and production facilities which would be subject to continuous supervision by fixed inspection teams. A second list would contain the national totals of various armaments, installations, and production facilities, which are subject to arms controls, as well as regional totals of these objects of control. To test the accuracy of the lists, it would not be necessary to check every item on them or to inspect every nook and cranny; it would be sufficient to inspect thoroughly one randomly chosen part of the territory and check the accuracy of those items of the list found in that part of territory.

It may be expected that each nation would delimit the regions in such a way that they would contain a more or less equal amount of armaments and other objects of control. The choice of the region to be made subject to disarmament and control in a particular year would be in the hands of the international agency (or of the other party to the disarmament treaty), and the nation concerned would not know in advance which region would be chosen. The selection of a particular region might be

based either on a random choice by lot or on a suspicion of the likelihood of evasion in a particular area. If both sides should try to apply the game theory, the first method of selection might be safer, as otherwise one side would try to outguess the other. (If B thinks that A is likely to choose area "a," B would transfer all extra weapons to area "b"; if A thinks that B might think so, it would choose area "b" instead of "a"; if B thinks that A might think that B might transfer the weapons to "b" because it thinks that A might choose "a," B might put them in "a," etc.) Choosing by lot might be better in the long run, and with each subsequent selection the odds against a successful evasion increase considerably.

If a nation should put a disproportionate number of its weapons into a particular region and not report all of them in the preliminary list, its deception would be easily discovered if that region should be chosen as one of the first areas to be thoroughly inspected. If a nation should succeed in its deception during the early phases of disarmament, the consequences would not be disastrous since the other side would still possess powerful retaliatory forces in its still undisarmed regions. With each new selection of a region to be inspected, the chances of detection increase by a large proportion, and it is rather unlikely that the region containing a disproportionate number of weapons would be the last one chosen. Though, if it should be, the deception would become apparent before the other side would embark on the final stage of its own reduction; consequently the deceived side would still have one-sixth of its original force and its task of retaliation would be facilitated because only one-sixth of the other side's territory would remain uninspected.

Before the choice of the region to be disarmed and inspected, teams would be stationed at all places subject to continuous inspection. In order to prevent last-minute shifts between regions, inspection teams would also be stationed on the borders between regions and at principal rail and road centers and airfields at the time of each selection. After a region has been selected, teams on

the boundaries of the selected region would remain there while other teams would be withdrawn from the boundaries of unselected regions and would aid in the inspection of the selected region.

Immediately after the selection, the nation concerned would submit a detailed list of armaments and other objects of control located in the selected region, the totals of which should not differ from the general list submitted in advance. Mobile inspection teams would be entitled to check the accuracy of the list and to investigate whether any non-listed objects are located in the region. They would also supervise the actual process of disarmament within the region. This process would be repeated the next year in another territory, until all had been disarmed.

Alternative Methods

There have been some objections to the idea of random choice of areas to be disarmed because of the danger that this method might completely disrupt national defense arrangements and thus create a chaotic situation of which one of the parties might take advantage. Difficulties have also arisen because of the relationship of disarmament areas in the Soviet Union and Western Europe; a purely random choice might create a vacuum on the East-West boundary line.

Instead of dividing each country into regions, all the territories of the NATO parties on the one hand, and of the parties to the Warsaw Treaty, on the other, might be lumped together, for the purpose of division, into regions. There would be six regions in Western Europe, six regions in Eastern Europe (including European Russia), six regions in the Soviet territories east of the Urals, and six regions in North America (Canada and the U.S.). At the beginning of each period, two regions would be chosen on each side, one in Western Europe, one in Eastern Europe, one in Soviet Asia, and one in North America.

If it is assumed that the greatest danger is caused by the

proximity of military forces, and that surprise attack can best be prevented by knowing what is happening in the border regions, disarmament and controls might be introduced first in the regions closest to the points of contact between the two sides, namely the boundary line between the two parts of Germany and the Bering Strait. In each subsequent period, they would be extended to the next region and in the last stage they would reach the two regions on both sides of the Ural Mountains, southwestern Europe, and the southeastern U.S.

If the nations prefer to keep their armed forces on their boundaries until the last minute and do not wish to start disarmament at their borders, the process outlined above might be reversed, and disarmament and controls introduced first in the Ural regions, in the Iberian peninsula, and in the southeastern U.S.

Once a departure is made from random selection of regions, there is no need to have regions of equal size. Instead of dividing all four groups of territories into six equal parts, it might be desirable to try to get used to the whole process slowly. Thus, one could start with a relatively small proportion of the territory the first year and increase each year the size of the regions. Thus 5 per cent would be disarmed the first year, 10 per cent the second year, 15 per cent the third year, 20 per cent the fourth year, 25 per cent the fifth year, and the remaining 25 per cent the sixth year.

While it is conceivable that in the first stages a large quantity of equipment and some military personnel would simply be moved out of the regions subject to inspection and demilitarization, with the advance of the process the room for such transfers would be so diminished that a country would no longer be able to do this. If desired, it should be possible to institute some more limited controls on the boundaries of the regions, thus freezing the situation as of the moment of instituting such controls. In addition, annual inspections of small areas in each region could check the correctness of the original inventory pre-

sented by each side at the beginning of the first phase of disarmament. Thus, if there should be an agreement to reduce armaments by 10 per cent in the first period, both sides might agree that, in addition to complete control and disarmament of the first region, 5 or 10 per cent of the territory of each other region would be subject to inspection and, if necessary, to disarmament during that period, and similarly thereafter. If this combination of the two approaches could be worked out, it might be possible to have a systematic progression of disarmament and inspection of connected regions as well as a random check on the accuracy of information supplied officially. Whichever of these methods is adopted, the amount of inspection would be reasonably correlated to the size of the cut in armaments and would thus remove one of the major Soviet objections to prior American proposals on arms control.

The areas of other countries would be similarly divided into six zones, and the zones subject to disarmament and control would be chosen each year by the international control agency or by one of the other methods outlined above. Even if there should be some territories which have been partly demilitarized at an earlier stage of the disarmament process, they would have to be further disarmed in accordance with these proposals. It is possible, however, that the process of disarmament might proceed faster in some parts of the world than in others, and with the consent of all the nations in a particular area (e.g., Africa or Latin America), it might be feasible to complete disarmament of that area prior to other areas, thus permitting a more efficient use of the international inspection teams and better training for the more difficult task in other areas.

In conclusion, it seems that the territorial method of arms control is more practicable than some of the other methods previously proposed, as it permits gradual extension of random inspections in proportion to the progress in actual disarmament. If it is combined with fixed controls over the principal military installations and production facilities, it should provide suffi-

cient guarantees to justify a more rapid progress in the execution of a disarmament plan, regardless of the character of that plan. Whether a particular disarmament plan is limited to a first stage, or to specific categories of weapons, or is a plan for complete disarmament, the territorial method offers important advantages, both technical and political.

22. After Detection—What?

By FRED CHARLES IKLÉ

Recent arms-control literature has overlooked almost completely the serious problem of what sanctions or penalties might be effectively invoked against the violator of an international control agreement. This essay is a rare exception. Mr. Iklé addresses himself to the many difficult psychological, political, and military problems that would confront the leaders of an injured nation in the event of a violation by another party to an arms-control treaty. These problems, he says, are more serious in a democracy than in an authoritarian state. He concludes by suggesting several proposals to deter cheating.

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THE current debate on arms control and disarmament puts great stress on the problem of how to detect violations of whatever agreements may be reached. To this end, inspection schemes and instruments for detection are developed, their capabilities and limitations discussed, and efforts made to test and improve them. Indeed, the technical question of detection dominates not only the domestic debate but also the international disarmament negotiations.

Yet, detecting violations is not enough. What counts are the political and military consequences of a violation once it has been detected, since these alone will determine whether or not the violator stands to gain in the end. In entering into an arms-control agreement, we must know not only that we are technically capable of detecting a violation but also that we, or the rest of the world, will be politically, legally, and militarily in a position to react effectively if a violation is discovered. If we focus all our attention on the technicalities of how to detect a violation, we are in danger of assuming that our reactions and sanctions will be adequate.

A potential violator of an arms-control agreement will not be deterred simply by the risk that his action may be discovered. What will deter him will be the fear that what he gains from the violation will be outweighed by the loss he may suffer from

the victim's reaction to it. In other words, even if we can develop an inspection system that makes the probability of detection very high, a nation contemplating a violation will not be deterred if it thinks it can discourage, circumvent, or absorb our reaction.

We have learned (almost too late, in the case of the nuclear-test ban) that an opponent may thwart our detection techniques by evasive techniques of his own. We should also realize that he may thwart the consequences of detection—which we count on to deter violations—by military or political stratagems. We must study, therefore, not only what our opponent may do to avoid detection, but also what he may do to escape the penalty of being detected.

Let us discuss the question of what may happen when an evasion is detected under four general headings: (1) the reaction of world opinion; (2) the political reaction by the injured country; (3) various military measures that the injured country could undertake in an effort to restore the situation that would have existed without an arms-control agreement; and (4) military and political measures that would go beyond this "restoration."

The Limits of World Opinion

World opinion, it is sometimes argued, will help to enforce disarmament agreements. World opinion supposedly will turn against the violator, provided he is discovered and "convicted" in an internationally accepted forum. He will lose prestige and influence in the uncommitted countries. In addition, various world-wide political reactions are expected to work to his disadvantage.

"World opinion" is such an amorphous concept that one finds it difficult to determine just how it can injure a violator of arms-control agreements. Speeches or resolutions in the United Nations, or critical editorials in the world press, are not likely to hurt him very much. One reason world opinion is so impotent is

that its memory is so short. If the world's reaction cannot be translated immediately into substantive political or military changes damaging to the violator, it will lose all force.

The Soviet suppression of the Hungarian revolution illustrates the point. This gave an exceptionally violent shock to world opinion—in fact, more violent than many possible violations of arms-control agreements are likely to be. This is particularly true since evidence of a violation might often be equivocal and involve technicalities hard for the public to understand. Some of the most cherished beliefs of the West and also of the uncommitted countries were flouted in Hungary: A popular revolt against a dictatorial regime in a small nation was crushed from outside by a large power. Agreements were broken in the most flagrant fashion. One was the promise given by the Soviet-installed Kadar Government to the Yugoslav Government not to take punitive action against Imre Nagy when he left sanctuary in the Yugoslav Embassy. Another was the invitation extended to General Maleter and other delegates of the legal Hungarian Government to negotiate the withdrawal of Soviet forces—a trap to catch and execute them. Yet, if one tries to list the penalties that world opinion imposed on the Soviet Union and the Kadar Government for these violations of its most sacred norms and of several important articles of the United Nations Charter, there is very little to record. There was a slight loss in the strength of Communist parties in Western Europe (confined mostly to intellectuals on the fringe of the Party), but the loss is no longer noticeable. The strain on President Tito's relations with Moscow and the strengthening of NATO ties (particularly with Iceland) were largely ephemeral. Kadar has not been officially recognized as Hungary's legal representative in the United Nations; but he has been sitting in the General Assembly.

Other recent events have aroused world opinion, such as the Peking regime's violent repressions in Tibet and its violations of the Indian border. Yet in February, 1960, only a few months after indignation in India had reached its peak, the Communists

increased their vote in Kerala from 35 to 43 per cent. And many of Communist China's neighbors continued to favor her admission to the United Nations.

Perhaps significantly, when Khrushchev discussed the nuclear-test ban before the Supreme Soviet in January, 1960, he chose to emphasize the reaction of world opinion as a deterrent to disarmament violations. By arguing that it was a sufficient deterrent, he tried, in effect, to brush aside the problems of inspection and control. But even if one assumed that the reaction of world opinion constituted an adequate sanction—an assumption challenged above—inspection would still be essential. A violator who does not risk being detected obviously does not need to fear world opinion. In any case, the West has paid insufficient attention to the stratagems which a detected violator can pursue to avoid or mitigate whatever action an aroused world opinion might take.

Many devices are available for this purpose. Thus the violator can frustrate the international inspection system and prevent it from reaching an official finding (study of Communist obstruction of inspection in North Korea reveals a large bag of such tricks). Or he can blame the other side for having violated the agreement first, and thus confuse the issue, or even generate an adverse political reaction against the injured party. Or he can accuse the other side of fabricating the evidence as a pretext for breaking the agreement or for covering up some other misdeed. Or he can assert that the agreement is obsolete in view of what he claims are changed political or military conditions and denounce it unilaterally prior to the intended violation (this would be analogous to the Soviet declaration that the four-power agreements on Berlin were no longer valid). Finally, if some unfavorable reaction in world opinion is unavoidable, it may turn out that the violators "will cover themselves with shame"—as Khrushchev argued when he spoke about the nuclear-test ban: "If some side violates the assumed commitments, the initiators of

this violation will cover themselves with shame, they will be branded by all the peoples of the world.” Yet, six weeks before making this assertion that a nuclear-test ban would be enforced by world opinion, Khrushchev had this to recommend: “International reactionary circles are still trying to discuss the so-called ‘Hungarian question’ in the United Nations. Let them keep it as a souvenir if this consoles them.”

Not only may the violator be contemptuous of world opinion, but he also may justify his acts on the grounds that they are demanded by the welfare of “the people” or by History—History being his conception of a superior morality that takes precedence over world opinion. “Had we not helped you,” Khrushchev told the Hungarian Communists, “we would have been called stupid, and History would not have forgiven us this stupidity.”

Restraints on Action by the Injured Country

To be effective, a sanction must be applied as a result of governmental decisions by the injured countries. In democratic countries, government decisions are influenced by active public opinion, or, more precisely, by the conception of public opinion held by the government leaders. In these circumstances, democratic governments might experience serious political difficulties in reacting effectively to a detected evasion:

(1) The injured government must acknowledge the fact that there has been a violation. If the violation is open and well publicized, no difficulty exists. But if evidence of the violation is equivocal or based on secret intelligence, the government may be reluctant to acknowledge the evasion or feel unsure of its ability to convince public opinion. For example, an admission that the control agreement had failed might be exploited at home by the political opposition, particularly if the agreement had been made originally by the party in power. In such a situation, some decision-makers may favor an interpretation which casts doubt

on the intelligence data relating to evasion or which belittles the importance of the evasion. Responsible decision-makers seldom distort evidence deliberately. But the interpretation of complicated information is often a matter of judgment and discretion; hence subtle biases may decide the issue. Responsible officials would be particularly disinclined to accept equivocal evidence about an evasion of a disarmament agreement if they had previously been forced to defend the agreement against partisan charges that it might be violated. Yet, a democratic government could institute only minor penalties against an evasion without informing legislative bodies and the public about the exact situation and explaining the need for drastic retaliatory or corrective measures.

(2) The injured government must be willing to increase military expenditures and to offend pacifist feelings. Now, the reaction to a localized or minor violation need not disturb the defense budget appreciably (the new military equipment needed to counteract the North Korean violations of the rearmament clause was not a heavy burden); but the breaking of a major disarmament agreement will almost certainly require new military measures, perhaps a full-scale program of rearmament. The decision to react firmly and regardless of expense will be a hard one. Public opinion may not approve, especially if the evasion occurred gradually or if it merely consists of a resumption of some activity that had been discontinued—such as testing. If knowledge of the evasion is based exclusively on clandestine intelligence sources that cannot be revealed, the opponent's denial may find receptive ears among domestic opposition groups.

We have already questioned the effectiveness of world opinion as a sanction against arms-control evasions. It is ironic that it may be domestic public opinion—or rather the government's conception of it—that actually prevents effective sanctions being taken. The classic instance of this, and one that may have been a contributing cause of World War II, was England's reluctance

to rearm in response to Hitler's violations of the Versailles rearmament restrictions. With what he called "an appalling frankness," Prime Minister Baldwin explained in 1936 why his own government had been unable to react:

You will remember at that time [1932-33] the Disarmament Conference was sitting in Geneva. You will remember at that time there was probably a stronger pacifist feeling running through this country than at any time since the war. You will remember the election at Fulham in the autumn of 1933, when a seat which the National Government held was lost by about 7,000 votes on no issue but the pacifist. . . . I asked myself what chance was there . . . within the next year or two of that feeling being so changed that the country would give a mandate for rearmament? Supposing I had gone to the country and said that Germany was rearming and that we must rearm, does anybody think that this pacific democracy would have rallied to that cry at that moment? I cannot think of anything that would have made the loss of the election from my point of view more certain.

(3) The injured government must accept the new risks created by its reaction to the violation. It may see more than the domestic difficulties involved. For example, it may have embarked on long-range policies which seem more promising and important than counteracting an accomplished evasion, and it may hesitate to jeopardize them.

It has been argued that all countries will be deterred from violating a major arms-control agreement in present circumstances because to do so would set off an unrestricted arms race that would eventually lead to disaster for the guilty as well as the innocent. But this is an assumption which may not be shared by a country set on violating the agreement. Its leaders may reason that the very prospect of an unrestricted arms race might itself inhibit the injured party from reacting to the violation. And, in fact, the injured party might feel it safer to write off the

violation as a loss rather than risk new dangers by a policy of rearmament—especially if it now finds itself in a weaker military position as a result of having complied with the agreement.

This dilemma is most serious. For example, the nuclear-test-ban conference adopted an article on March 19, 1959, upon the insistence of the United States and the United Kingdom, affirming a country's "inherent right" to withdraw from the treaty if its provisions, "including those providing for the timely installation and effective operation of the control system," are not being fulfilled. This article might be of cardinal importance in connection with China's accession to the test-ban treaty, because part of the control system would have to be installed in China. But would it give the Western powers much leverage against Chinese obstructionism? In the absence of a known instance of illegal testing, would the West be willing to withdraw from a test-ban treaty with the Soviet Union, resume testing, and risk accelerating the arms race merely because the "timely installation" of the control system was being prevented by China?

(4) The injured government may have to reach agreement with allies before it can react. All disarmament agreements of current interest involve the United States with one or more of its allies. It is usually a difficult task to prepare a joint negotiating position vis-à-vis a Communist opponent. Agreeing on a Western response to a violation will raise anew the problem of allied coordination. The stronger and more explicit the reaction proposed, the more difficult it will be to achieve agreement. And all the problems of domestic public opinion and partisan politics discussed above will be evident in the allied nations whose cooperation is required.

"Restorative Measures" After a Violation

The military sanctions against evasion of an arms-control agreement can either be confined to measures that restore the situation that would have existed without the agreement or they

can go further. Let us call the former "restorative measures." If the violator resumes testing, the injured country will do likewise; if the violator reoccupies his part of a neutralized zone, the other will move back into his; and if the violator rearms, his opponent will rearm to the same extent.

The problem of deterring violations has often been oversimplified by assuming that a detected evasion would automatically be taken care of by the cancellation of the agreement and the application of such "restorative measures." But three conditions have to be met if "restorative measures" by themselves are to be an adequate deterrent:

- (1) The potential violator must fear the risk of being detected.
- (2) He must also fear that a detected violation will cause an unwanted response by the injured country.
- (3) He must not expect a violation to bring him an irrevocable advantage that would outweigh whatever gain he derives from abiding by the agreement.

The importance of the first condition is fully recognized. The second condition depends on the political factors we have just discussed. Both these conditions are needed for deterring an evasion by any type of sanctions, whether "restorative" or "punitive." Here we are interested in the third condition, because if it is not met, "restorative measures" alone are inadequate.

This third condition is not met, for example, if an agreement comprises several arms-control measures in such a way that the separate measures, taken individually, favor either one side or the other. The agreement remains in the interest of both parties only if all measures are observed. Violation of a part of it cannot be deterred by the threat of "restorative measures" confined only to this particular part. Additional sanctions are required. Otherwise the violator can break just those control measures that are not to his advantage. He will stand to gain if his violation remains undiscovered or ignored; and he will also gain if the violated part of the agreement is canceled, because the residual agreement will then be more to his advantage.

This is precisely what happened with the Korean armistice. The clause prohibiting the introduction of new military equipment was violated by the Communists from the first day, but cancelation of this clause by the United Nations Command did not come until four years later. So the Communists gained on the first count. They also gained on the second count (after the United Nations eventually instituted "restorative measures"), because the residual armistice agreement was more favorable to them than the original agreement. (It was they who had been primarily constrained by the canceled rearmament clause.)

It might be argued that an arms-control measure can survive only if all its separable components are equally in the interest of both parties. If this argument is true, the future for disarmament agreements is bleak. It is hard enough to arrive at over-all agreements that will not, over time, seem disadvantageous to one side or the other. But individual components of an agreement are inevitably of unequal value to opposing nations. For example, in addition to the Korean armistice, several of the current proposals for disengagement zones are composed of very unequal provisions.

There are other situations where the threat of "restorative measures" would be insufficient to deter an evasion. The violator may gain an irrevocable technological lead or an irreversible strategic advantage. As has often been pointed out, if American and Soviet troops were withdrawn from Western and Eastern Europe, the United States might find it difficult or impossible to return in the event that Soviet troops moved back in. Western alliance arrangements might have lapsed, the American troops might have been demobilized, and in any case they would have to be transported a greater distance—not to mention the American public's unwillingness to send "the boys" back overseas, particularly under a threat of nuclear war.

To sum up, "restorative measures" will not deter a nation contemplating a violation of a disarmament agreement in those situations where our third condition is not met, namely, when

the violator expects to gain less from abiding by the agreement than from abandoning it. Indeed, a potential violator might enter into agreements solely in order to seek gains by violating them. He would calculate that there would always be a chance of his escaping detection or that "restorative measures" might be delayed or frustrated for political reasons. And if he lost out on these chances, a mere return to the *status quo* would leave him no worse off than before he entered into the agreement. The violator, in fact, would be playing a profitable game: "Heads you lose, tails we're even."

Increasing the Military Effort as a Penalty

Where the threat of "restorative measures" is not enough to deter evasions, additional penalties are required. But to deter a would-be violator effectively, they must be credible.

By far, the most important and practical penalty would be a general increase in the military effort, going beyond what would be required to restore the pre-agreement situation. (A threat to start a war would not be equally credible and would therefore be less effective.) Suppose the aggrieved nation increases its defense budget by \$20 billion. (As a result of the North Korean aggression, the United States increased its national-security expenditures from \$13 billion to \$52 billion.) If the violator does not follow suit, he will become relatively weaker than he was before breaking the disarmament agreement. If he does follow suit, he would, in effect, be "fined" the equivalent of \$20 billion, though, of course, both sides would bear this burden.

The injured country may be able to step up its defense effort in ways that do not require a large increase in the budget and still impose significant penalties on the violator: for example, by changing the deployment and readiness of weapons, or by resuming military activities that were voluntarily limited beforehand. However, in doing this, the injured party must be pre-

pared to run the risk that such a "punitive" increase in its defense effort will renew or accelerate the arms race. Actually, the violator may wish to avoid an arms race with so determined an opponent; he may be unwilling or unable to pay his full "fine" and have to accept a loss in relative military strength.

Those who wish to prevent the violation of arms-control agreements must deter potential violators by their evident determination to make a double sacrifice. In the event a violation occurs, they must be ready to assume a greater economic burden for defense, and they must risk a step-up in military competition. The willingness to make such sacrifices involves less, however, than would be required to deter limited aggression. To do that successfully, a country must be willing not only to accept increased defense costs if deterrence fails, but also to suffer casualties and face the risk that the limited conflict may expand.

Political sanctions are likely to be less effective than an increased defense effort, although they may play an important complementary role. What they might be is difficult to predict in the abstract. If the potential violator is cautious, this uncertainty may help to deter him; if he is adventurous, like Hitler, he will gamble on his ability to meet and overcome the political reaction.

Further Proposals for Deterring Evasions

The remaining question is how to make the penalties of evasion seem more inevitable and severe and the gains more dubious. Parliamentary governments are more likely to take strong action against a violation if they are supported by public opinion. The evidence of violation, must, therefore, be such as to impress the public as authoritative and impartial. A finding by an international organization will be influential in this regard, especially with public opinion outside the countries directly affected. An international body, however, has many weaknesses that can be exploited by a violator. Ideally, one would want the

best of both worlds: the greater authenticity and dramatic impact that an international inspectorate provides, and the flexibility and versatility of national intelligence systems. One should, at any rate, avoid entering into arms-control arrangements that are administratively closed to intelligence information. The current draft treaty for the nuclear-test ban sets up a rigidly confined scheme from which intelligence information is essentially excluded. The Antarctica treaty, on the other hand, provides for complete freedom of inspection by anyone without any international mechanism (except suggestions for arbitration in the event of "disputes").

The deterrence of evasions could also be strengthened if parliamentary governments took steps to simplify and speed up their decision-making procedures. The United States Government, for example, has sometimes adopted enabling legislation to facilitate quick Presidential action, in order to disabuse a potential aggressor of the idea that partisan conflict or public quarreling about constitutional limitations or the issue at hand might inhibit an effective response. The Formosa resolution of 1955 is an example of Congressional authorization for the President to take action on the basis of his findings alone. The United Nations Participation Act of 1945 authorizes the President to act upon a decision by an international body, the United Nations Security Council. To strengthen a disarmament agreement both types of authorizations might be useful, and a good time to enact the appropriate enabling legislation would be when Congress ratifies an arms-control treaty.

The power and influence of the legislative branch of the government might be brought to bear in other ways so as to increase the likelihood that the reaction to an evasion would be prompt and strong. Special parliamentary committees might assume an explicit responsibility for all arms-control agreements, and stand ready to mobilize legislative support for any necessary response to some breach of a treaty. The Joint Committee on Atomic Energy, which has privileged access to classi-

fied information and is on intimate terms with the executive, offers appropriate administrative precedents. Thus, Congress might create a "Joint Committee on the Observance of Arms Controls" to demonstrate its determination to make arms-control agreements succeed.

An effective response will often require coordination and agreement among allies. The difficulties which this involves might be lessened by making arrangements in advance for joint action. First, in order to ensure agreement as to the fact of evasion, all evidence could be evaluated by an inter-allied agency permanently set up for this purpose. To minimize considerations of domestic politics, it should not have the responsibility for recommending any action. The next step by the allied governments might be a relatively minor one, on which agreement could easily be reached, namely to give publicity to the committee's findings; for example, they might forward a report on the evasion to the United Nations or to an international control system provided by the disarmament treaty. From this point on, the allied governments, having jointly held and publicized their interpretation of the violation, would feel under more compulsion to reach agreement on the effective sanctions needed.

It may be argued that allied governments cannot be "tricked" into such a procedure, because if they are opposed to, or afraid of, vigorous action, they will avoid taking the first step: the evaluation of evidence. This argument would have force if the procedure were to be determined *after* the violation had been charged. But it is proposed here that by a preparatory agreement, the Allies shall firmly establish the procedure at the time they conclude the arms-control treaty, when they are still fairly confident that the other side will adhere to it, and are hence less opposed to a firm commitment for joint action against what seems a remote contingency.

All these political measures must be planned to the accompaniment of whatever military preparations will be necessary to deal with violations of the agreement. For instance, under an

agreement that prohibits only the testing of certain weapons, both sides will remain free to continue research and development. The country that is determined to abide by the agreement cannot afford to neglect this research without opening the way for a potential violator to gain and then exploit a technological lead. Unless the public understands this fact, parliamentary governments will be handicapped in maintaining a research effort for weapons whose testing has been prohibited. The same problem would also arise under an agreement which does not prohibit the development of a weapon but does prevent the deployment of it—for example, a ban on placing weapons of mass destruction in orbit.

A program to deter evasion of arms-control agreements, like the one suggested here, does raise some additional problems for which an analogy can be found in the strategy of deterrence against nuclear attack. First, there is the problem of carrying out a threat if deterrence fails, that is, of imposing sanctions in the event of evasion or of retaliating in the event of attack. An advance commitment to carry out the threat is rational and necessary for a policy aimed at deterrence; but carrying out the threat after deterrence has failed may be undesirable or even irrational. Second, a policy of deterrence has to cope with accidental violations of the agreement, just as a policy of deterrence against nuclear attack has to control the risk of accidental war. In the former case, both sides will wish to correct the unintended violation and preserve the agreement; in the latter, both will want to avoid or correct an "accident" before it leads to full exchanges of violence. Third, there is some resemblance between the advantage of a first strike in mutual deterrence against nuclear attack and the advantage of gaining time through an evasion in certain arms-control agreements. None of these analogies is exact, of course. But they do suggest that ideas in the literature on deterrence can be as relevant to the prevention of violations in arms-control agreements as they are to the prevention of war.

23. Nth Countries and Disarmament

By FRED CHARLES IKLÉ

In this essay, Mr. Iklé examines the arguments of those persons who believe the Nth-country problem should receive the "highest priority" and that arms-control measures in other areas will be virtually impossible unless something is done first to control the dispersion of nuclear weapons. The present members of the nuclear club, he maintains, "have good reason to discourage the proliferation of independent nuclear capabilities," but they cannot stop it. Nevertheless, "it is not impossible to control the dangers from 'Nth countries' as they arise."

"Nth Countries and Disarmament," *Bulletin of the Atomic Scientists*, December, 1960, pp. 391-94. Reprinted by permission of the author and the *Bulletin of the Atomic Scientists*, 935 East 60 Street, Chicago 37, Ill.

THE possibility that more and more countries might acquire nuclear weapons—often referred to as the “Nth-country” problem—has received a great deal of attention in discussions on disarmament. Concern has been expressed lest this diffusion of nuclear capabilities upset international stability and increase the danger of general war. As a result, many people believe that the Nth-country problem should receive highest priority in our effort for arms-control measures. Indeed, it has been argued that disarmament might turn out to be impossible unless immediate steps are taken to control this problem.*

The high priority assigned to controls against Nth countries is based, essentially, on three arguments: (1) that the diffusion of nuclear capabilities presents one of the greatest dangers, (2) that it is feasible to stop this diffusion now, and (3) that it will

* Hugh Gaitskell, for example, said: “I view the spread of nuclear weapons to the nations of the world as a prospect fraught with the utmost danger. Unless something is done to stop it I believe that within the next ten years this problem is going to dominate the whole international situation.” (Speech at Walsall, June 28, 1959.) And Senator Hubert Humphrey wrote: “If decisive action is not taken soon on agreements to control and curb the weapons of mass destruction, so many countries will possess them that control will no longer be a possibility.” (*The Progressive*, October, 1959.) Similarly, Hans Morgenthau stated: “If the nuclear armaments race cannot be brought under control before any number of nations will have nuclear weapons, only a miracle will save mankind.” (Letter to the *Washington Post*, February 23, 1960.)

become increasingly more difficult or impossible to control it later. It is our thesis that each of these arguments must be qualified by a number of counterarguments, so that, on balance, it becomes more doubtful whether Nth-country controls must figure so prominently in disarmament policies. But this is not to say that we should be disinterested in controlling the spread of nuclear weapons!

Since the above-listed arguments have been developed cogently in a number of thoughtful writings,* we can, for the sake of brevity, confine ourselves mainly to the counterarguments.

The Dangers from Nth Countries

The most important argument that has been advanced against the diffusion of nuclear capabilities is that this diffusion would increase the probability of a global thermonuclear war. Two explanations have been offered for this argument; we might call them the "statistical theory" and the "catalytic war theory."

According to the statistical theory, the probability of a global thermonuclear war increases as the number of nuclear powers increases, because (a) the larger the number of these powers, the greater the probability that nuclear weapons will be used in some conflict (both because of more opportunities and a greater chance of irresponsibility); and (b) if nuclear weapons are used in a conflict, the risk of its expanding into a global war is greater than if the conflict remained non-nuclear.†

The counterargument, which should be weighed against this

* National Planning Association, *The "Nth Country" Problem and Arms Control*, (1959); Arthur Lee Burns, *Power Politics and the Growing Nuclear Club* (Center of International Studies, Princeton University, 1959); Richard S. Leghorn, "The Problem of Accidental War," *Bulletin of the Atomic Scientists*, June, 1958; Howard Simons, "World-Wide Capabilities for Production and Control of Nuclear Weapons," *Daedalus*, Summer, 1959; and Denis Healy, "H-bombs for Everybody? The Dangers of Nuclear Plenty," *Commentary*, January, 1960.

† Usually, this "statistical theory" is not spelled out in detail but advanced more as an intuitive proposition that Nth countries would increase the "mathematical chances of war."

proposition, is that the diffusion of nuclear capabilities might make the involvement of major powers in local conflicts appear to be more risky and hence render it less likely. In other words, Nth-country capabilities might either help to deter local aggression altogether or they might help to isolate local conflicts. Intuitively, one would probably give more weight to the statistical theory than to this counterargument, but the case is not as clear-cut and well proven as it might seem at first blush.

The second theory, the catalytic-war theory, holds that an Nth country might start a global war deliberately through the simulation of an attack by one of the major powers against the other. If the major powers maintain some elementary precautions against such an accidental triggering of a war, the technological requirements for such a strategy will be much greater than commonly assumed in this theory. However, even if an Nth country possessed the requisite capability (including delivery systems, intelligence information, etc.), its possible motives for "catalyzing" a global war would seem to be outweighed by overwhelming risks: (1) The instigating Nth country might not survive the central war, (a) because of the repercussions from world-wide fallout, (b) because it might be on the target list of one of the major powers and suffer direct attack; (2) If one of the major powers emerged as a strong winner, the instigating government would fall under its domination instead of gaining opportunities for aggrandizement; (3) The nuclear weapons might fail to trigger a central war and the instigators might subsequently be discovered and eliminated; (4) The operation might be discovered before it was accomplished, with similar results.*

* In spite of frequent references to the catalytic-war theory, these hurdles, which the catalyzing country would have to pass, are rarely discussed. Arthur Lee Burns' study, *The Rationale of Catalytic War* (Center of International Studies, Princeton University, 1959)—its title notwithstanding—does not deal with the rationale of the catalyzing government or its possible irrational processes. (This does not detract from the usefulness of Burns' analysis of a situation where several, about equally strong, nuclear powers fear a surprise attack from each other.)

The counterarguments against both the statistical theory and against the catalytic-war theory do not deny that the diffusion of nuclear capabilities might make local nuclear disasters more likely, either in an Nth-country conflict or as a result of irresponsible action. What they question is the notion that such local disasters would necessarily increase the risk of global war. The more critical factors that determine that risk are the reaction time, the decision-making processes, and the vulnerability of the major powers, all of which are more or less independent of Nth countries.*

Can Diffusion Be Stopped Now?

The second argument, which we wish to examine, is that it is feasible to stop the diffusion of nuclear weapons at this time through some arms-control measures. What measures have been proposed?

The one most prominently mentioned is an international agreement to stop the testing of nuclear weapons. Both those in favor of a test ban and those opposed have rarely analyzed the actual effect of such a ban on the Nth-country problem—quite a remarkable shortcoming of this long intellectual debate! Here, we only wish to examine this link; we will *not* deal with a test ban proper and the various arguments for and against it that have been raised.

The effectiveness of test suspension to curb Nth-country capabilities is subject to four limitations:

(1) Important potential Nth countries might simply refuse to accede to the treaty—world opinion notwithstanding. There exists no legal, or at least politically feasible, international measure by which the United Nations or any other group of

* To the extent that there is a dependence, it might well work in the other direction. The presence of Nth countries might stimulate the major powers to institute more cautious reaction and decision processes.

powers could force a country to accede.* Some potential nuclear powers might try to wrest unacceptable concessions for their accession to the treaty—especially from countries where domestic political forces demand that the treaty be made universal. For example, in the British Parliament statements have been made that France must accede to the treaty, and in the U.S. Senate the importance of China's accession has often been stressed. How high a price will France or China try to exact for their signature to the treaty?

(2) Even if most countries did accede to the treaty, certain nuclear weapons could be developed without testing, and perhaps with good reliability. An Nth country might feel confident enough about such weapons, and it could try to convince the world by arguing that the *first* weapons tested by the other nuclear powers all seemed to have worked.

(3) Certain tests of small weapons might not be detectable by the international inspection mechanism, especially in a large, closed country like China. (This limitation has received a great deal of attention—perhaps excessive in relation to the other limitations.)

(4) An irresponsible country could expect that there would be no significant sanction, should its violation be detected. (The present draft treaty does not provide for any sanctions!) Would a Hitler be deterred from breaking a treaty by the risk of an unfavorable reaction of world opinion? We must recall here, that it is precisely the irresponsible governments, not the law-abiding ones, that worry us in the Nth-country problem.

In spite of all these limitations, however, a test ban might

* It is remarkable that this fundamental limitation has scarcely been mentioned in public discussions. For example, even the very thoughtful studies of the National Planning Association make no mention of the accession problem. (*Establishing International Control of Nuclear Testing*, pp. 9 and 16, and *The "Nth Country" Problem and Arms Control*, pp. xvi-xvii and 33.) Leo Szilard, in his article "To Stop or Not To Stop" (*Bulletin of the Atomic Scientists*, March, 1960), however, did point out that a potential Nth country might well demand bombs in return for acceding to a test ban.

have some inhibiting effect on Nth-country capabilities by slowing down international competition, so that even aggressive and irresponsible countries might move more slowly. We can hope for such an inhibiting effect, but we can't count on it.

Other possible measures to curb Nth countries are subject to similar limitations. The more rigorous the controls, the greater is the accession problem; the more palatable—and hence weaker—the controls, the greater the risk of evasion. The reluctance of many countries to submit to international controls is well illustrated by India's opposition to the rather mild controls of the International Atomic Energy Agency. Effective measures against Nth-country capabilities would have to go much further than these IAEA controls.

In theory, the two major powers in cooperation would, of course, have the military might to prevent any other nation from developing its nuclear weapons. It has often happened that former opponents joined forces to face a new common enemy. In the present-day reality, however, the basic conflict of interests between the United States and the Soviet Union interferes even with very mild common efforts to control Nth countries. For one thing, the West suffers from a negotiatory weakness. The more exercised Western statesmen and public opinion become about Nth-country dangers, the more disinterested can the Soviet negotiators pretend to be.* Thus, the West may pay an inordinate price to make some small progress on an ostensibly mutual problem.

* For example, during the United Nations debate on the IAEA, the Soviet representative said: "The Soviet delegation considers that the inspection and control of recipient states, that is to say the underdeveloped countries, can only infringe their sovereign rights and retard . . . peaceful atomic industry. . . . The Soviet Union concludes bilateral agreements on atomic cooperation with other countries on the basis of equality and mutual respect. . . . The agreements contain no conditions referring to control and inspection. . . ." (U.N. General Assembly, October 30, 1958.)

Similarly, on November 20, 1959, the U.N. General Assembly adopted with seventy votes the Irish resolution which recommended that the tenation disarmament conference study measures to curb the spread of nuclear weapons. The Soviet bloc, however, abstained (as did France).

Furthermore, in those areas where "Nth-country" capabilities are a live issue today, the mutuality of interest is tempered by diametrically opposed political objectives. Since the Communist bloc can use military threats to exert political pressures on Western allies (for instance, the military threats used in official statements regarding Berlin and West Germany), nuclear weapons play a different role among our allies than they would, say, among Warsaw Pact countries. Similarly, it would seem to be in the Western interest that nuclear assistance becomes a divisive issue between Moscow and Peking, whereas the Russians would probably like this issue to cause trouble between us and the French.

Despite all these qualifications, a case can be made for a *limited* mutuality of interest between us and the Russians in curbing the spread of nuclear capabilities. But this might express itself more effectively in tacit mutual restraint than in explicit arms-control measures. For example, it would seem politically infeasible for the Russians to sign an agreement to withhold nuclear assistance from China, in return, say, for a U.S. commitment to do likewise with regard to West Germany or other allies, for this would impose unacceptable strains on Moscow's relations with Peking. But as long as we do not commit ourselves to give, or not to give, nuclear weapons to our Far Eastern allies, the Russians have a double incentive to remain cautious about giving nuclear assistance to China.

Controls May Be More Feasible Later

The third argument, which we think should be qualified, maintains that the only time to control the spread of nuclear weapons is now, before more than three or four powers possess independent capabilities. It may be true that the progressive diffusion of these weapons is hard to reverse. Or, to put it more precisely, it seems likely that a country which possessed nuclear weapons would demand more in return for giving up these

weapons than a country that did not yet possess them. And if two countries are hostile to each other, the acquisition of nuclear weapons by one will spur the other to follow suit. But this does not mean that undesirable effects from diffused nuclear capabilities would be beyond control. In fact, it may be easier to control the possible dangers from *N*th countries when they begin to manifest themselves than to try to prevent the development of indigenous nuclear capabilities. Manifest dangers would stimulate the mutuality of interest among the major powers more strongly than mere potential dangers. Hence, the climate for international controls with effective sanctions could become far more favorable than it is today.

The negotiatory prospects, too, need not necessarily deteriorate. It is true that more nations would have to participate in the initial negotiations for nuclear-arms controls, rather than in the subsequent negotiations concerning the accession to a finished treaty (which might be just as tough!). This would make life harder for the negotiating teams, but it need not make an agreement less likely. Would a test ban have been facilitated if only the United States and the Soviet Union had been involved? The few agreements bearing on arms control which have recently been concluded—such as the IAEA statute and the Antarctica treaty—typically involved many nations.

The argument that the diffusion of nuclear weapons is irreversible is also based partly on the contention that an agreement to abolish nuclear weapons would become more difficult to control with an increasingly larger number of countries in a position to hide finished weapons. It is certainly true that we know of no method to detect hidden nuclear weapons, and that this would constitute an immense problem if the United States and the Soviet Union tried to set up an inspection scheme to make sure that neither one kept any hidden bombs. The comparatively few weapons that other countries might eventually produce would add little to this problem. Furthermore, it must be remembered that it is by no means certain that clandestine diversion of

peaceful nuclear-energy programs to weapons production could always be detected, although this task is more manageable than the detection of hidden bombs.

How to Deal with Irresponsible Small Powers

Particular concern has been expressed that irresponsible small or medium powers might create serious international problems to the disadvantage of the major powers. If none of the major powers wants to back up such an irresponsible country and become involved in its conflicts, the threat could readily be controlled with the means now available to international organizations. For example, the United Nations Security Council might be a useful organ to enforce restitution of any gain from an act of local nuclear aggression.* A historical precedent for such action may be found in the U.N. settlement of the British-French-Israeli attack on Egypt. The Soviet Union, of course, did not openly cooperate with the United States at that time, but in a sense it consented to the settlement sponsored by the United States and Canada. (It abstained on the vote creating the United Nations Emergency Force.)

In an area where the major powers could not agree on joint international action, the threats from a smaller nuclear power might still be controlled by *regional* arrangements. For example, if a Latin American country threatened a neighboring country with nuclear weapons, the United States would probably not wish to see the Soviet Union enter as "peacemaker," assuming that the American-Russian conflict would still be the dominant problem at such a time. Given some cooperation from the other hemisphere countries, however, the aggressor could be restrained, or, if necessary, punished, through an effort of the Organization of American States.

* Since only the present four nuclear powers and Nationalist China have a veto power in the Security Council, a small Nth country could not obstruct the U.N. machinery.

In these two examples, we have suggested only the use of international bodies that already exist. It seems reasonable to expect that additional arrangements might be developed, or existing arrangements strengthened, if the irresponsibility or aggressiveness of *independent* nuclear powers became a serious problem, particularly after nuclear weapons had once been used irresponsibly in a local conflict without direct involvement by the major powers. It is quite likely that the possible diffusion of nuclear capabilities in various regions of the world will require a special effort by the major powers influential in these regions to prevent serious threats to peace. This development, however, need not necessarily result in a net loss for international stability.

To re-emphasize, we do not wish to imply that the possible dangers from Nth countries are unimportant. The present nuclear powers have good reason to discourage the proliferation of independent nuclear capabilities. One way to slow it down a little, for example, would be not to assist the spreading of reactor technology, since this technology inevitably creates local capabilities that could later be misused to manufacture nuclear bombs.* A reduction in this kind of assistance appears more tolerable today than it would have some years ago, since the economic urgency of nuclear power has recently become rather doubtful and the enthusiasm for it in underdeveloped countries has waned.

Progress in world peace and arms control, however, does not become impossible if nuclear weapons should spread to more countries. This is not the last chance to control this problem. On the one hand, there seem to be no politically feasible measures to *stop* the spread of nuclear weapons now (although it can be slowed down). On the other hand, it is not impossible to control the dangers from Nth countries as they arise; in fact,

* The restrictions of the IAEA or of bilateral agreements cannot apply to the skills and know-how, only to the materials. And even restrictions on materials might later be violated.

such controls later might be more feasible than stopping the spread of weapons technology now. Those who argue for the ease of stopping the spread now, as compared with the difficulties of controlling it later, should not forget that even if it were possible to force all non-nuclear countries into an agreement never to manufacture nuclear weapons, the future enforcement of such an agreement against violators would still depend on the cooperation of the major powers. But given this cooperation, the Nth-country problem will not be out of control.

24. NATO and the N-Plus-1 Country

By ALBERT WOHLSTETTER

Mr. Wohlstetter analyzes the Nth-country problem as it bears upon NATO strategic policies. He considers four major alternatives for dealing with nuclear weapons presently being debated by the Western European powers. Reliance on the American guarantee, based upon strategic nuclear weapons under centralized control, he concludes, is the best policy both for Europe and the United States.

The following essay consists of part of the introductory section and conclusion of the author's thirty-three-page article in *Foreign Affairs*. Readers interested in how Mr. Wohlstetter develops his argument are referred to the original article cited below.

"Nuclear Sharing: NATO and the N-Plus-1 Country," *Foreign Affairs*, April, 1961, pp. 357, 358, 386, and 387. Copyright 1961 by the Council on Foreign Relations, Inc. Reprinted by permission of the author and the publisher.

So far as long-run world stability is concerned, the Nth country tends to think of the problem as beginning with N plus 1. The original irony intended by the label "Nth-power problem" was seated precisely in the fact that the United States and the Soviet Union thought of the trouble as the third-power problem, Great Britain thought of it as the fourth-power problem, France as the fifth-power problem, and so on. Each new or prospective nuclear power thinks of the problem as that of stopping the next country after itself. This is the N-plus-1-country problem.

As for world stability through arms control, France and England, for example, have tended to think of their own acquisition of nuclear weapons as entirely beneficial. Mr. Macmillan has justified British weapons and V-bombers on the grounds that they permit the English to exercise influence on arms-control arrangements between the two major nuclear powers. General de Gaulle speaks of the increased effect on nuclear disarmament which France would have by becoming a nuclear power. In the limit, one might suppose that unanimity for nuclear disarmament may be achieved by distributing bombs to everybody.

The choices among alternative nuclear policies confronting members of NATO are likely to play a key role in the diffusion of nuclear capabilities—especially in Europe—and in the problem of avoiding small or large nuclear wars. For this reason I would

like to consider, from the standpoint of the national interest of the individual members, some of the major alternatives open to them. What sorts of nuclear capability are the lesser industrial powers in the West likely to achieve? What are the motivations for achieving independent capabilities? What is the role of the American nuclear guarantee? Is it, as it is currently fashionable to say, "incredible"?

Four Nuclear-Policy Alternatives

The four main alternatives open to the European powers are these: (1) the rejection of nuclear weapons, of the American guarantee, and of all association with nuclear powers; (2) the development of national strike forces; (3) a jointly controlled force, and especially the NATO-wide force; (4) reliance on the United States guarantee. Let us examine the relevance of each for avoiding large-scale nuclear war and for meeting lower levels of aggression in Europe.

For the Europeans, the first alternative, to repudiate all reliance on nuclear weapons including the American guarantee, would increase the likelihood of Soviet attack. Such an attack would still be dangerous for the Soviet Union, since the long-run interests of the United States would be critically injured by it. Yet it is apparent that, in so far as the attempt to disentangle the immediate fate of Europe from that of the United States were successful, it would lessen the probability of American response and the consequent risks of aggression. But the second and third alternatives are hardly better than the first. A European effort to achieve nuclear independence, either in the guise of national forces or of any of various joint enterprises, would have much the same effect. It would weaken the American guarantee against Soviet attack without putting anything of substance in its place. The fourth alternative, the American guarantee of Europe, is a necessity for both the United States and Europe.

The U.S. Guarantee Is Vital

To keep the American guarantee valid, it is important not to diminish American nuclear power in Europe until conventional forces have expanded to close any gap; but in any case it is essential for us to stay in Europe. To remove any doubts about the responsible use of nuclear power, it is vital to keep that power under centralized control. For deterrence and responsibility we must do what we can to inhibit the diffusion of nuclear weapons.

Such a policy is best from the standpoint of both American and European security. It happens also to be sound from the standpoint of the stability of the world system and—in so far as the Soviet Union has a common interest with us in avoiding the chance of nuclear miscalculations—it may be in their interest too. This last is not necessarily a demerit. Our interests are not the negative of Russian desires, any more than the reverse is true. We should not assume that the acquisition of nuclear weapons by China or the Warsaw powers is good for us because it is bad for the Russians.

A good many people today favor unilateral steps toward disarmament, even at great risk, in the hope that this will lead the Russians to take similar actions. My point is quite different. The policies advocated here would *improve* alliance defense. We should take these measures, so to speak, “even though” they are in the interests of both East and West—for example, in reducing the chance of war by miscalculation or “accident.”

It may be felt that such a national policy to abate, delay, or control nuclear diffusion is too uncertain or slow, that only an extensive arms-control agreement and perhaps even the imposition of a world authority are worth trying. However, we should not think of the achievement of arms control as if it were going to take place in one millennial, transfiguring instant. The serious control proposals on the agenda for negotiation today would themselves be at best very small steps, very indirect and uncertain. A verifiable test-ban agreement could have a modest

utility, but it would be a long way from stopping the diffusion of nuclear capability, and would fail to offset the strides toward diffusion taken by several of our alliance policies. By the same token, a reversal of such alliance policies is likely to be a more effective brake on nuclear diffusion. Both in our national security policies and in our arms-control agreements, we can only hope to work on the problems of stability piecemeal. The probability of nuclear war, however, can be affected year by year.

25. The Case for Ending Nuclear Tests

By HANS A. BETHE

The author of this essay believes that war “no longer makes sense as an instrument of national policy.” He is a strong advocate of a “carefully controlled limitation of armaments.” If we want to “stop the armaments race,” an agreement to cease testing nuclear weapons is a good place to begin.

Mr. Bethe believes that the Russians are “sincere in wanting the nuclear-test-cessation agreement and do not intend to cheat on it.” (Incidentally, his essay was written before the Soviets insisted that the test-ban control machinery should be operated by a three-man administration composed of a Communist, a Westerner, and a neutral, each having veto power, and before they unilaterally resumed tests in September, 1961.)

After analyzing the technical aspects of a test ban and appraising Soviet political motives, the author concludes that a test agreement would be a net gain for the United States. The essay by Edward Teller, written at the same time (see essay No. 26), calls upon the United States to resume tests.

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THE problem of detecting nuclear explosions varies with the medium in which the nuclear explosion is set off. Until recently, practically all the nuclear explosions were set off (either on the ground or above it) in the atmosphere. The best-known method for detection of nuclear explosions is the collection of radioactive debris, either by planes flying in the air in those regions where the debris is expected to arrive or from the fallout on the ground. . . .

Many Kinds of Detection

We can also detect a nuclear explosion by the acoustic method, which consists of recording the pressure wave created by the explosion. As this wave goes through the atmosphere to distant points the pressure decreases, but it is still large enough, even at distances like 10,000 miles, to be easily recorded. The wave is such a good indicator of nuclear explosions that the United States has usually announced Russian explosions very soon after they have taken place. We have announced far more Russian explosions than the Russians themselves. Similarly, the Russians have been able to detect our nuclear explosions.

To improve detection, it is proposed, as part of a treaty on the cessation of nuclear tests, to have a large number of inspection stations in each country, especially in Russia, in the United

States, and in the British Commonwealth. With the network of stations agreed on during the Geneva negotiations, it is generally believed that we would be able to detect and identify explosions in the air down to the level of one kiloton or possibly lower.

The second medium in which nuclear explosions have been set off is water. Such explosions are, if anything, even easier to detect than those in the air because the pressure wave is very well transmitted through water, so much so that even an explosion of a few tons can be recorded through water for thousands of miles.

Nuclear tests might also be carried out in outer space. Detection there is considerably more difficult than in the air or in water. . . .

Underground-Testing Problems

Our most vexing problem is underground testing, which has received the most publicity. It has the obvious advantage that it does not contaminate the atmosphere, but also the great disadvantage that from a detection point of view it is therefore impossible to collect radioactive samples. From experience gained in Nevada, we know how deep an explosion has to be buried in order to prevent escape of radioactive material into the air. A kiloton bomb must be buried about 400 feet underground, a 20-kiloton bomb about 1,100 feet.

The displacement of the earth produced by an underground explosion is sufficiently great to be easily recorded by a seismograph unless the explosion itself is very small. The two largest underground explosions to date were carried out in Nevada in the autumn of 1958—one of 5 and the other of 20 kilotons. They could be observed on the seismographs throughout the United States, and the larger one gave a clear record in Russia.

Earthquakes and Explosions

Unfortunately, underground explosions produce the same type of record as earthquakes, namely seismograms consisting of a

series of perhaps twenty wiggles. There are very few distinguishing marks between the two types of seismogram. The best that seismologists have been able to find is the so-called first motion, namely whether the first wiggle starts up or down.

The criteria for distinguishing earthquakes from explosions have been discussed in detail during the Geneva [test-ban] negotiations. It has been decided that control stations should be set up at regular intervals of about 600 miles in seismic regions—i.e., regions in which earthquakes normally occur—and about 1000 miles in regions not subject to seismic occurrences. This means that about twenty stations would be set up in the U.S.S.R.

It is estimated that some 100 to 200 earthquakes which have a force equivalent to that of an explosion of 20 kilotons occur in the Soviet Union every year. Of these, about half would be distinguished from explosions by first motion and other features in the seismograms obtained in the proposed network of stations. This leaves about 50 to 100 earthquakes a year which could not be distinguished from explosions.

How Much Inspection Needed?

The only sure way to tell an earthquake from an explosion is to send an inspection team to the location of the earth disturbance. A combination of seismograms from the several stations can determine the location to an accuracy of about five miles. Thus, one would have to send an inspection team to explore an area of about 100 square miles to comb it for evidence of an explosion. A number of scientists have tried to work out procedures for such an inspection.

How many inspection teams will have to be sent out every year? As already pointed out, there are annually about 50 to 100 earthquakes in the Soviet Union which on the seismograph look like explosions of 20 kilotons or more. It is generally agreed that it would not be necessary to investigate each and every one of these events. Thirty percent of the questionable ones would

suffice. Under the proposed Geneva system, this would mean that about twenty inspections must be carried out in the Soviet Union each year in order to monitor possible nuclear tests above 20 kilotons.

A more detailed study of this problem has been made by Dr. Richard Latter of The RAND Corporation. He finds that the capability of the control system would be greatly increased by distributing the stations somewhat differently from the Geneva proposal and by increasing their number in Russia from twenty to thirty. This would make it much easier to distinguish earthquakes from explosions, so that only about ten earthquakes a year in the Soviet Union with a force equivalent to 20 kilotons or more would remain unidentified by their seismograms. Ten inspections would, therefore, cover all doubtful events equivalent to 20 kilotons or more. Forty inspections would make it possible to monitor all earthquakes above 5 kilotons. (A 5-kiloton bomb is a small bomb. The Nagasaki bomb had a force of 20 kilotons.)

Possibility of Concealment

Our capability of detection and inspection of underground explosions under the Geneva or the Latter system would thus be quite satisfactory if it were not for the possibility of deliberate concealment of explosions. A very powerful method of doing this has been suggested by Dr. Albert L. Latter, the brother of Dr. Richard Latter. The method, known as "decoupling or muffling," consists of making an enormous cavity underground and setting off the atomic bomb in the middle of that cavity. It is estimated that the apparent size of the explosion is thereby reduced by a factor of about 300 if the hole is made in hard rock.

. . . To decouple the explosion of a 20-kiloton weapon, you need a spherical hole of about 50 million cubic feet, or nearly 500 feet in diameter. Moreover, the hole must be 3,000 feet below ground. The Big Room of Carlsbad Caverns, for example, is only big enough to muffle 10 kilotons.

Would the Russians Try to Cheat?

Two main questions are: Does any country want to go to such extremes as construction of the big hole in order to cheat on a test ban? Can we really assume that the Russians would go to such pains to negotiate a test-cessation treaty just in order to turn around the next day and violate it?

Having participated in the negotiations with the Russian scientists at Geneva on three occasions, I believe that they are sincere in wanting the nuclear-test-cessation agreement and do not intend to cheat on it. . . .

Many other Americans, without disagreeing on any of the scientific facts, believe that the Russians are bent on violation, and they therefore oppose the cessation of testing. Their line of reasoning runs about as follows: We cannot detect Russian underground tests of bombs of small yield; since we cannot detect these tests, we should assume that they are carrying out such tests. If they carry out such tests and we do not, then they will soon be ahead of us in the area of small nuclear weapons. When they are ahead of us in this area, they will have military superiority and thereby can blackmail us into complete submission. At that moment, the whole free world will have to capitulate to Russian Communism.

It seems to me that this is a series of *non sequiturs*. In particular, it greatly overestimates the importance of atomic weapons. Our military strength is made up of many different components, of which atomic weapons are but one. Means of delivery like planes and rockets are another important component; so are radar, communications, decision-making, transportation, and many more.

Atomic weapons are the most developed of all these components of our military strength. . . . Among atomic weapons, the big hydrogen bombs are the main part of our deterrent. By contrast, tactical weapons are only a moderate fraction of our atomic armaments—and we already possess a big arsenal of tactical weapons. To claim that the Russians would be supreme

if they could achieve superiority in this one fraction of one area of military preparations seems to me very farfetched.

To achieve this superiority, the Russians would have to violate the proposed treaty banning weapons tests. I do not think the Russians could risk such a violation even if there is only a small likelihood of detecting the tests. Even if we had no system of physical stations detecting nuclear tests, the Russians would not risk having some defector tell us about a clandestine nuclear explosion. If there were such a defector telling us of a Russian violation, it would not be very difficult to find physical evidence of it. I believe the Soviet Union, which is posing as a peace-loving nation—whether sincerely or not—simply cannot afford to be caught in a violation, and therefore I think the Russians will not try to cheat.

Let us assume the most unlikely and worst possible case, namely that the Russians have gone to all the trouble of negotiating a treaty only in order to violate it. It would take them a very long time to cause any significant number of explosions; it would cost them a tremendous effort. As long as they stay underground and do not make use of space testing, they could only test small nuclear weapons. Even in the area of small nuclear weapons a test series would take a number of years. . . .

While the Russians could gain considerably by the resumption of tests of small nuclear weapons, they also have enough such weapons to give them a sizable capability in case of a tactical nuclear war. Therefore, they do not have a desperate need for improving their weapons, and thus not enough incentive for testing to risk a violation. Yet, if nuclear tests were resumed legally, the Russians would probably make more rapid progress than the United States. . . .

I believe that if tests were resumed, if the negotiations on test cessation were to break down, then the Russians would choose to test big weapons, hydrogen weapons, in the megaton class. . . .

If we were now to resume testing . . . we could not force the Russians to test only small weapons underground. . . . The Russians could test anything that they considered to be to their military advantage. Whether their tests would be in the multi-megaton category, or whether they would try to decrease the weight for, let us say, a one-megaton weapon, I could not predict. But I strongly suspect that they would choose to test large weapons rather than small ones. . . .

U.S. Stands to Gain by Test Ban

. . . Further testing by both sides would bring the Russian capability closer and closer to ours. If we stop nuclear testing now, we may keep at least the little bit of military advantage in nuclear weapons that we still possess at the present time. It is certainly late enough. So that even from the purely military point of view, for our purely military strength compared to that of Russia, we would gain by a test-cessation agreement.

What is more important, the political gain would be enormous. Basic to the accepted control system of a test ban are the control stations on the territories of the contracting parties. If the agreement becomes reality, the Russians will, for the first time, permit foreign international inspectors to go on their soil to check up on their activities, and to have extraterritorial rights. This is the first time that the Russians have agreed to yield any part of their sovereignty. Of course, we are asked to give up the same part of our sovereignty too, but for the Russians, with their extreme secrecy, this is a far more difficult thing to do and represents quite an achievement in the negotiations.

The Russians have further admitted that there should be on-site inspections whenever there is a suspicious event detected by the physical-control stations. This is another major concession. Thus, in the test-cessation agreement, we would get the first admission in principle of the rights of a foreign-control organ on Russian soil, an admission which might be of the utmost importance for further disarmament agreements. It would be

very dangerous indeed for us to jeopardize this achievement by not concluding the test-cessation agreement.

How the Ban Could Begin

The main importance of our negotiations on the test-cessation agreement comes, I believe, not from this agreement itself, important as that is, but from further agreements which must follow. It has been recognized widely in this country and also in Russia that the continued arms race makes no sense. The two countries, Russia and the United States, are fully capable of destroying each other several times over. This is an absurdity. War simply no longer makes sense as an instrument of national policy. I believe we should try to arrive at a situation of carefully controlled limitation of armaments. It is a difficult thing to achieve and it will be a long time before we achieve it.

However, if we want to stop the armaments race, then we have to make a start somewhere. It has to be made in a way consistent with United States policy, that is, every limitation of armaments must be carefully controlled. We have to make a start in an area where it does not cost us too much, where we can back off again if this first treaty does not work, and this is another reason why the test-cessation agreement is so important.

Keep Nuclear Weapons from China

I have so far discussed this problem entirely on the basis of the two great powers, the United States and Russia. However, the effect on other powers is at least equally important. . . .

We have every interest in restricting the nuclear club to its present members, essentially three, with France a junior partner. If the three great nuclear powers continue nuclear testing, then there will be no pressure on the other countries to refrain from developing nuclear weapons. If, however, the three great powers give up nuclear testing completely, then popular pressure, both

from the great powers and from the small nations, will be very strong on countries that seek weapons, in order to make such countries adhere to the treaty which the great powers have signed.

I cannot predict whether Peking will, in fact, adhere to a test-cessation treaty. I think that both Russia and the United States would desire that Peking do so. But one thing seems to me certain. If we do not have a treaty on cessation of nuclear tests, then Communist China will surely get nuclear weapons and will get them in a fairly short time. For this reason, it seems to me imperative not only to have a treaty but also to have it soon.

Perfection May Bring Nothing

At this time, we can still get something in return if we agree to stop nuclear testing. But we have a wasting asset here. Before long, public opinion in the world will force us to stop nuclear testing without getting anything in exchange. At present, we get in exchange acceptance by Moscow of stations on Russia's soil and of the principle of controlled disarmament. We may further get in exchange the restriction of the nuclear club to three members.

Opponents of the test-cessation agreement want to have a perfect agreement. They want to have an agreement which will be sure to detect each and every violation no matter how small. I think that by insisting on perfection, we shall end up with nothing.

26. The Case for Continuing Nuclear Tests

By EDWARD TELLER

After discussing certain technical and political aspects of nuclear tests, Mr. Teller concludes that the United States "should resume weapons testing in those areas where control is not feasible—both underground and in interplanetary space." Since the proposed inspection system would "not give us any assurance against systematic violations," he argues, we would have to rely on the good word of the Russians. This we cannot afford to do, because we believe in "*controlled* arms reduction."

The author insists that the resumption of tests would be to the net advantage of the United States, because it would help us in the development of small tactical nuclear weapons and would contribute to the peaceful uses of atomic energy.

(This essay was written before the Soviets unilaterally resumed nuclear tests in September, 1961.)

"The Case for Continuing Nuclear Tests," *Headline Series* (New York: Foreign Policy Association—World Affairs Center, January–February, 1961), pp. 39–58. Reprinted with the permission of the author and the publisher.

THERE are three questions connected with testing of nuclear weapons which deserve careful public discussion. Is it worthwhile to continue testing? Is it feasible to supervise an agreement on test cessation? And what should be done about future nuclear tests?

Is the A-bomb the Ultimate Weapon?

The power of nuclear bombs surpasses conventional explosives to a degree which is not easily visualized by anyone. It is, therefore, not surprising that right after the first nuclear explosions the majority of American people, whether they knew much or little about the subject, believed that no further developments would take place. . . .

The fact is that in the last fifteen years we have learned how to increase the explosive force a thousandfold, and we have made great strides in reducing the weight of a bomb of a given power. We have decreased the expense of the biggest nuclear explosives to a point where this expense is no longer an essential factor. On the other hand, small nuclear explosives for tactical purposes are still limited in their usefulness because of their cost. We have made considerable progress in reducing the radioactivity produced by big nuclear explosives, but small nuclear explosives continue to produce the standard amount of radioactivity. We

have made nuclear explosives much safer, much easier to handle, and much more adaptable to specific purposes. The majority of these purposes are connected with wartime operations such as the sinking of a submarine or the destruction of a plane. All this has been accomplished by improvements which added new and often surprising details to our nuclear devices each year. . . .

At present, there is no intention to build bigger nuclear explosives. There is one, and to my mind only one, justification for a great arsenal of megaton bombs: to deter the use of these big explosives against our own country. But if this purpose of deterring attack is to be made really effective we must have what is technically called a "second-strike force." This means a force which can survive an all-out nuclear attack on our country and still deliver a counterblow. . . .

One step which will make this program much easier to execute is to decrease the weight of our retaliatory weapons by a considerable factor. . . .

It is difficult to move big rockets around the country in complete secrecy. It is expensive to construct atomic submarines which can carry a sufficient number of heavy missiles. A reduction of the weight of the explosive would reduce the weight of the rocket which has to carry the explosive. This would greatly simplify the task of establishing a second-strike force. Whether or not we can construct such a force could well determine our national survival during the next one or two decades. . . .

Value of Small Tactical Bombs

Further development of small tactical bombs might be even more important. In a situation where neither of the two greatest powers dares attack its opponent directly, the possibility of

limited warfare continues as a menace to peace. Each of the two sides does have a strong interest in limiting the territory and the aims of the conflict in order to avoid an all-out catastrophe. Arguments that nuclear weapons if used anywhere will precipitate all-out war are credible only as long as one or the other side finds that all-out war is to its advantage. I am certain that we shall not make such a dreadful and insane decision and feel sure the Russians will not either.

One can argue that we should not initiate the use of tactical nuclear weapons in limited warfare. In any case, we would put ourselves into a dangerously weak position if we neglected the possibility that the Russians might embark on such limited usage, particularly if we did not have the necessary tactical weapons to use in opposition. Therefore, it is an absolute necessity that we should develop tactical nuclear explosives.

We Do Not Know Who Is Ahead

It has been stated that we are ahead of the U.S.S.R. in tactical weapons. Because tactical weapons have low yields, it is difficult, if not impossible, to observe the testing of such weapons. For example, some of the most interesting tactical explosives have yields less than a thousand tons [of TNT]. Below five thousand tons, our observations of Soviet tests are uncertain and incomplete. Below one thousand tons, we have at present no means of observation. Therefore, we do not know whether we or the Russians are ahead in this important field.

In the United States, interest in tactical nuclear explosions has increased rapidly during the past few years. There are many exceedingly important additional improvements which we now have on the drawing board. Some of these improvements would make our explosives easier to carry and to deliver. Others would make the weapons less expensive and therefore available in greater numbers. Still others would allow us to use nuclear

explosives with much greater discrimination. All of these developments also would mean that our requirements for military manpower could be substantially reduced. . . .

Proper development of nuclear weapons could bring about a situation where nuclear warfare need not overhit any target and could be sparing of the lives and the property of noncombatants. Our aim should be to destroy the war machine of the aggressor and to save human lives. It is my opinion that if we continue our present weapons development, this aim can be achieved. However, such a development requires further weapons testing.

Project Plowshare

This discussion would remain incomplete if I did not mention the possibility of peaceful uses of nuclear explosives, which we call Project Plowshare.

There are excellent and convincing experiments and arguments which indicate that these peaceful applications can be carried out, and that they will permit important projects which otherwise would not be feasible or economical. Further development of nuclear explosives could add much to the safety and economic feasibility of Plowshare. For instance, one may use nuclear explosives to move great amounts of earth. One may dig canals or one may blow away hundreds of feet of rock and dirt in order to expose massive deposits of iron or coal for pit mining. For this, we need explosives which are cheap, flexible and, above all, clean. We have sound plans to accomplish all this. But we need more nuclear tests. . . .

Can Test Cessation Be Policed?

A method to detect nuclear explosions in the atmosphere has been functioning for many years. It is true that for smaller shots of approximately a few kilotons this method becomes uncertain.

But the situation is relatively easily remedied. Some additional inspection stations and appropriately scheduled flights over the territories of each of the great powers which possess nuclear bombs will allow detection and identification of shots down to one kiloton.

Nuclear explosions under the ocean are similarly open to detection. In this case, it may not be possible to identify the violator, but at least we could have some chance of finding out that a violation did take place. . . .

The situation is quite different with respect to underground tests and tests in outer space. Such tests can be carried out without exposing any person to the slightest radioactivity. Moreover, these tests can be effectively hidden in such a manner that even long systematic series of nuclear experiments can be carried out without any real chance that such series will be detected by any technical observation. We have sufficient evidence to make us confident that such series can be used to yield practically all the information which is needed for a successful development of nuclear explosives.

The possibility of detecting underground explosions has received a great deal of attention. The proposed procedure consists in obtaining the locations of underground disturbances by seismographic measurements and in determining by on-site inspection whether such an event has been due to a nuclear explosion or to an earthquake.

. . . After exceedingly great delays, the Russians have suggested three annual inspections in their country. This number is an extremely small fraction of those earthquakes which the seismographs cannot distinguish from nuclear explosions.

Is Inspection Possible?

But further difficulties exist. How will the inspection team determine whether or not a nuclear explosion has taken place?

If simple and well-known procedures are followed, the explosion itself will not leave any mark on the surface. A reliable distinction between an earthquake and an explosion can be obtained only by finding the radioactivity produced by the explosion. This radioactivity, deposited at an unknown depth, will be limited to a few hundred feet from the explosion point. All that the seismographs can tell us is that the event occurred in an area which is approximately one hundred square miles. If the Russians took pains to cover their tracks, we might as well look for a needle in a haystack. . . .

Muffling of Underground Shots

The difficult question of policing underground shots has become almost hopeless due to the discovery that underground explosions can be muffled or decoupled. By placing nuclear explosives in a cavity of appropriate size, the signal can be decreased by a factor of more than 100. This is impressive, particularly if contrasted with possible improvements in the detection system. The most hopeful estimates of such improvements could increase the sensitivity only fivefold.

If a would-be violator should decouple his shots, systematic testing below 20 kilotons could not be detected. To detect shots above 20,000 tons, 600 robot stations in the Soviet Union alone are needed. Unfortunately, there are in Russia each year approximately 5,000 earth movements which would give the kind of signals we are discussing here. Due to the unsatisfactory state of this discrimination between natural earthquakes and artificial ones, practically all of these 5,000 movements would have to be considered suspect. This poses an enormous problem of inspection.

Use of Cavities Practical

But is it, in fact, practical to build the cavities needed for the decoupling? It has been argued that the expense of the excavation would be prohibitive. The process of excavation, it is

also said, would be too conspicuous. These arguments are of limited validity.

The cheapest known method of producing cavities of required size is to wash them out from thick salt deposits. Available reliable engineering figures show that a cavity accommodating 20 kilotons can be produced in two years for \$10 million. This is not excessive in view of the considerable importance of nuclear tests. The establishment and maintenance of the control system is likely to cost more than the amount which would have to be spent to outwit the technical inspection, even if we consider systematic and extended nuclear-test series. . . .

Moreover, the big cavities which are usually discussed are needed only if maximum decoupling is to be attained. Cavities of one tenth the volume are sufficient to decouple a shot by a factor of 20 or 30. For smaller shots, such cavities could be readily excavated by completely conventional methods. . . .

Outer-Space Testing

It is possible to send out a rocket which carries a nuclear explosive as well as observation equipment. Once the missile has attained the appropriate distance from the earth, the compartments containing the explosive and observing equipment are separated and allowed to drift apart. When they have drifted apart to an appropriate distance (let us say ten miles) the explosion takes place. . . . The results can then be sent back in a coded form which would not attract any attention. Secret explosions of this kind could be carried out at present up to many megatons. . . .

The policing of space tests has been carefully discussed. Policing is possible, but expensive. It is expected to be effective as long as the violator takes no countermeasures to conceal his explosions.

The hiding of space explosions makes it necessary to carry

more weight in the rocket. This added weight will cost money. Policing makes it more expensive for the violator to operate, but it continues to permit his operation if the power of the explosion remains under a given limit. This limit in the case of space testing is given by quite a large figure—one-half megaton. . . .

It is not easy to make an estimate of the expense of space testing. Twenty million dollars per shot seems to be a reasonable figure. This figure is somewhat higher than the expense of big explosions in the past. It will be further raised if policing is established. However, we should remember that the main expense connected with space testing is due to the necessity of lifting heavy loads, a task in which the Russians excel. . . .

What About Future Tests?

Can we be satisfied with a token inspection and rely on Soviet good will?

To my mind such a procedure is inconsistent. If we are willing to rely on the good intentions of the Russians, we have no justification to go to all the trouble, incur all the expense, and produce all the friction with which an inspection system is necessarily connected. If the inspection system does not give us any assurance against systematic violations, we should make it clear to ourselves that we are in fact simply accepting the word of the Russians. We may then proceed to consider whether or not we are wise to do so.

But, if our national policy continues to be based on *controlled* arms reduction, it is necessary that we should make the controls meaningful. If we do not do so, we mislead the American public.

The most frequent argument raised in support of a test ban is the hope that such a ban will be a first step leading to relaxation and further arms control. What has happened during the present two-year moratorium on nuclear tests and nuclear-test negotiations does not justify such a hope. The period preceding

our test moratorium corresponded to a lull in the cold war. Today militant gestures by Moscow in connection with West Berlin and Cuba, to mention only two points of tension, show an alarming increase in cold-war activities.

Moratorium Without Guarantee Dangerous

If we accept a test moratorium without a guarantee sufficient to insure against systematic Russian evasion, we must seriously consider the possibility that Soviet nuclear tests will put our adversaries into an exceedingly strong military position. Nuclear bombs are not the only weapons which are needed for a strong defense. The possible use of nuclear bombs, however, is inextricably connected with every one of the great dangers which face us. Military power alone will not stop the spread of communism nor will it solve the problems of the world. But if the Russians should secure a sufficiently great military advantage over other great powers, their dream of a Communist world empire might soon be realized. In view of these dangers, I believe that we should resume weapons testing in those areas where control is not feasible—both underground and in interplanetary space.

EDITOR'S NOTE. Dr. Teller has asked that the following passage be added to his essay: "The Russian test series has led to developments that may make it possible for the Soviets to prevent U.S. retaliation. This they can do by destroying a considerable part of our retaliatory force by their newly developed powerful weapons and partly by the use of rocket defenses developed in connection with atmospheric testing. The added dangers of the present situation require rapid development of nuclear explosives, and this, in turn, makes it necessary for the U.S. to resume atmospheric testing." (December 11, 1961)

27. To Test or Not To Test?

By HANSON W. BALDWIN

In this essay, written before the U.S.S.R. broke the nuclear-test moratorium in 1961, a military analyst weighs the pros and cons of testing. Unlike the physicist-authors of the two preceding selections, he does not come out for or against a resumption of testing. He takes into account a number of military, political, and psychological factors not dealt with by either Bethe or Teller. Acknowledging that a resumption of tests by the United States would incur "the opprobrium of public opinion" among certain groups at home and abroad, Mr. Baldwin maintains that if we decide to test, "our objective should be primarily military; secondarily the peaceful and inspection uses" of atomic devices.

"To Test or Not To Test?" *The New York Times*, June 26, 1961, p. 3. Reprinted with the permission of Willis Kingsley Wing. Copyright 1961 by The New York Times Company.

To test or not to test? That is the question that is disturbing Washington.

The unresolved stalemate in the nuclear-test-cessation talks at Geneva and the prospects that France, Red China, and other powers may develop small nuclear stockpiles within the foreseeable future face the Administration with another "Hobson's choice." Continuation of the uninspected moratorium on testing involves a risk and a certainty—the risk that Russia may be secretly developing new nuclear weapons or processes in hidden, undetectable underground tests; the certainty that, with time, other powers will join the hitherto exclusive nuclear club.

Resumption of testing by the United States also involves risks and a certainty; the risk of adverse world public opinion; the risk that Russia might gain more militarily by openly renewed testing than we would; the certainty that the tempo of the arms race would increase.

Some of the factors in this equation cancel each other out. The certainty that other powers would join the nuclear club, if the moratorium should continue without any binding agreements or enforcement machinery, would complicate the problem of nuclear control and might increase the danger of nuclear mishap. On the other hand, the resumption of testing might well have a similar outcome.

Risks May Cancel Out

The risk of undetected testing by Russia would seem to cancel out the risk of world opprobrium if the United States should resume testing. There will always be unfavorable psychological and political consequences as a result of any strong action by the United States in the world conflict.

Yet, these should not deter such actions, unless it is clear that the consequences would be so adverse as to cancel out the benefits. Security policies cannot be determined by a popularity contest or a world Gallup poll. The abortive invasion of Cuba, for instance, had it succeeded might well have stimulated far more respect for the successful and determined application of United States power than criticism of "Yankee imperialism."

The determining factor in the decision to test or not to test must be a military and technical judgment as to whether or not we stand to lose or gain by a resumption of testing by the United States and Soviet Russia.

Most scientists and military men—though not all—would probably agree today that (if Russia has not been testing secretly) the United States is technically, qualitatively, and quantitatively ahead of Soviet Russia in nuclear-weapons development.

Heavy Missile Warhead

There is no good evidence to suggest that the Russians yet have small or tactical nuclear weapons in the variety that has been developed by the United States.

More important, there is evidence to indicate that the Russian intercontinental ballistic missile warhead is heavy, ponderous, and bulky, so much so that the Soviet "first-generation" ICBM must be a "brute" of a weapon—expensive, difficult to manufacture, immobile, almost impossible to conceal. There is little indication that the Russians have manufactured or installed launch-

ing sites for any sizable numbers of this first-generation missile; indeed, what evidence is available is to the contrary.

Resumption of testing by the Russians could lead to the development of a more compact, lighter missile warhead and to second-generation missiles like our Polaris and Minuteman. This might come, of course, without testing, by extrapolation, but before a large-scale investment in such second-generation missiles was made a proving test would almost certainly be desired. The advances in United States nuclear technology to be expected from a resumption of testing would be even lighter, yet more powerful missile warheads than any now available and more varieties of small-scale tactical weapons for land, sea, air, and anti-air use could be developed. More important, two other potential developments, probably far away, loom as a possible result of resumed testing.

Could Lead to New Bomb

One might be the so-called "neutrons bomb," a weapon deliberately designed to maximize the killing flux of neutrons released at the instant of explosion, but to minimize (and perhaps eliminate entirely) the residual and persistent aftermath of radioactivity now associated with any nuclear explosion, particularly one in which fission products predominate.

Such a weapon would unquestionably provide any nation possessing it a considerably enhanced battlefield flexibility; enemy troops in a specific area, for instance, could be destroyed without extensive contamination of the area and without the danger of radioactive fallout over far wider areas.

The other possible development might expedite the production of an anti-ballistic-missile weapon. Project Argus, the series of high-altitude nuclear tests, demonstrated some interference with radio and radar from such space explosions. Further tests might reveal not only far more information about these effects—

of importance to the defense—but they might also reveal new methods, or rather refinements, of use in neutralizing or destroying the warheads of incoming missiles.

Speculative Factors

Thus, which side gains by resumed testing would appear to depend upon a number of speculative factors.

Russia would certainly gain more than we would, if our tests were primarily for peaceful purposes, as has been suggested, or to perfect an improved detection system, and if Russia's were primarily military.

The main, in fact the only, cogent reason for resuming testing is to maintain or to increase what seems to be our present military-technical advantage. If tests are resumed, the relative scale and speed of testing by both sides and the purposes or objectives of the tests would presumably determine who would gain or lose.

If we do decide to test, our objective should be primarily military; secondarily the peaceful and inspection uses. Otherwise, we shall clearly lose the military race, while incurring anyway the opprobrium of public opinion.

28. Arms Control Will Not Cut Defense Cost

By THOMAS C. SCHELLING and MORTON H. HALPERIN

The authors of this essay have helped to create the current arms-control consensus. According to this consensus, represented by most of the other contributors to this volume, the acceptance of viable arms-control measures by the nuclear powers would not necessarily save money. In fact, defense costs might become higher—at least for a number of years. The purpose of arms control, they argue, is not to save money but to lessen the risk of war and to make war less destructive should it occur.

“The Arms Budget and the Economy,” in *Strategy and Arms Control* (New York: The Twentieth Century Fund, 1961), pp. 120–27. Reprinted with the permission of the authors and the publisher.

DISCUSSION of arms control and the American economy is usually a blend of two ingredients—welcome relief at all the money to be saved, and anxiety about whether the economy can take it. Lower taxes, better schools, more housing, and campaigns against disease are widely proposed as ways of either forestalling depression or enjoying our savings. Massive programs of foreign assistance have been proposed and, at times, implicitly promised. But, however we weigh the opportunities and dangers in a sizable reduction of the more than forty billion dollars that we now spend on defense, we have first to ask whether arms control would bring such a reduction.

And it is by no means obvious that arms control, even rather comprehensive arms control, would entail rapid and substantial reductions in military outlays. Aside from the costs associated with the inspection and regulation of military activities—which might be appreciable—there is the more important consideration that many forms of arms control would not necessarily reduce the cost of military programs. It is quite possible that arms control would increase them.

Limited-War Forces

A few examples will emphasize the point. Suppose arrangements are devised, or understandings reached, that have the

purpose—or at least the effect—of inhibiting the introduction of nuclear weapons into limited war. One consequence may be an increased outlay on military forces equipped with more conventional firepower; and this would not necessarily be a violation of the spirit of the arms control. In fact, if we keep in mind that many of the advocates of nuclear weapons for limited war have emphasized the economy involved in these weapons, it does not seem unnatural that to avoid reliance on nuclear weapons we may sacrifice some expected “savings.”

Or consider measures that succeed in reducing the advantage, in the event of general war, of initiating it, and that succeed in allaying the fear of surprise attack. The danger of accidental war as well as of premeditated war might thereby be substantially reduced. So might the danger of “escalation” of small wars into a general war, and the danger of local military crises erupting into a general war through each side’s obsession with the importance of striking first. One of the consequences of the success of such arrangements is that the world may be made safer for smaller wars and other forms of violence, provocation, and harassment. A natural consequence might well be increased outlays on the kinds of military force required in a world in which the threat of massive retaliation, or the threat of accidental enlargement of a conflict, has lost much of its power to inhibit small-scale aggression.

Here again, it helps to keep in mind that reliance on the threat of general war as a means of policing the world against limited aggression has been at least partly motivated by economy. Measures that successfully reduce these threats on both sides might well be expected to eliminate some of those economies.

Second-Strike Forces

Again, consider the effect of an understanding that both sides will exert themselves to develop strategic forces that are as nearly invulnerable as possible, with reliable and invulnerable

communications, command, and control arrangements, and with safeguards against false alarms or unauthorized actions; and to pursue modes of deployment that minimize the danger of misinterpretation and misunderstanding. If successful, such measures deserve to be considered a very important kind of arms control. But even aside from the possible implications for limited war, the costs of pursuing these objectives might raise defense budgets.

“Invulnerable” strategic forces consist not only of weapons and vehicles, but of communications, command and control arrangements, warning systems, reconnaissance and intelligence, and all the other components of the “system.” Comparing, say, ballistic-missile submarines with unprotected, fixed-base missiles of known location, the former appear to be more consistent with the kind of understanding just mentioned. The former are also likely to be more expensive.

Expense in this case is tricky to define. An unprotected ICBM, especially if eight or nine out of ten can be kept in readiness, is a cheaper way of delivering explosive power on enemy territory if nothing intervenes to hinder its arrival. The submarine, with smaller missiles and appreciably less than 100 per cent time-on-station, is more expensive. But if we compare instead the cost per ton of explosive power delivered in unfavorable circumstances—in the event of a war that the enemy starts—the advantage may lie with the submarine.

The submarine has what economists call a “comparative advantage” for the retaliatory strike; a “soft” ICBM has a comparative advantage in an initial strike. For a *given* level of retaliatory capability, the submarine force provides less of a first-strike capability than the soft ICBM; for a *given* level of first-strike capability, the soft ICBM provides less retaliatory capability than the submarine.

That the submarine is in some respects an expensive weapon does not necessarily imply that defense budgets go up as we move in the direction of more “stable” strategic forces. (Nor is

the submarine necessarily typical of other weapons—mobile, hardened, airborne, or otherwise made more secure—that would enjoy similar invulnerability.) But at least this consideration provides no clear reason to suppose that an arms understanding with the Soviets along the lines mentioned would bring budgets down. They could well go up. They might especially go up if we moved urgently in the direction of these better controlled, less vulnerable weapons. In the short run, shifts in the character of our forces could cause appreciable budget increases.

Traffic Rules

Consider now some other understandings that we might reach, “traffic rules” for example. It is sometimes argued that airborne alert for the bomber force is a “stabilizing” measure; it provides assurance that we *could* retaliate after an attack, therefore greater assurance that the Soviets *would* not attack, and we need then be less hasty in a crisis. At the same time, it has been argued that airborne alert is “provocative” in getting a fraction of our bomber force in a state of alert that could be exploited for a quick effort to knock out Soviet bombers and missiles. Airborne alert has also been considered more conducive to false alarms, ambiguous accidents, or faulty communications and the danger of erroneous decisions.

Suppose it were concluded that there is truth on both sides. A possibility is to redesign airborne alert to preserve the advantage of mobile bombers while minimizing their apparent menace, reducing the likelihood of enemy misinterpretation, and improving our communications and control. In return for equivalent Soviet concessions, we might arrange flight patterns nearer to the continental United States, sacrificing proximity to target for other advantages.

This might come at a cost. There is the one-time cost of redesigning a complicated operation, testing it, moving personnel, and so forth. There might be a rise in the cost of keeping

effective bombers airborne (due, for example, to the increased refueling requirements for completing potential missions from starting points farther from targets); there might be cost reductions in abandoning certain criteria of readiness, pertinent to a first-strike capability, that are expensive to maintain. But the cost implications are not obvious *a priori*.

Similar restrictions might be considered for submarines. At present our ballistic-missile submarines (and undoubtedly any Soviet missile submarines) are severely limited by the range of their missiles. To participate in a sudden, well-coordinated surprise attack, the boats would have to be close to the enemy. To threaten post-attack retaliation, it is somewhat less necessary to be in a state of instant readiness to launch. Depending on how much delay in response is considered consistent with deterrence, there might be a difference of several hundred miles in the proximity zones required for a first strike and for a persuasive retaliatory potential. Without discriminating against ballistic-missile submarines, we and the Russians might reach an understanding about their proximity to each other's shores. A submarine close up would be considered in position to attack; a submarine farther offshore would be in retaliatory stand-by.

Such restrictions might or might not raise costs. They might lower them. But again the point is that this kind of arms control does not obviously entail sizable reductions in the budget. It is a matter of technical examination whether costs go up or down; and to a first approximation they might not be substantially affected.

Qualitative Improvements

As in any business, accidents and unauthorized actions can be reduced by the expenditure of money. Reliability can be better achieved by spending more money. Restraints can be accommodated, and particular kinds of reduced capabilities accepted, if compensating expenditures in other directions can be made. There is, in fact, little presumption that the kinds of military

forces that we and the Soviets might try to encourage on both sides, through our explicit and implicit arms understandings, would be of cheaper rather than more expensive quality. Even sizable quantitative reductions in strategic forces might not drastically reduce the total cost.

It has to be kept in mind that budgets are already limited by economic considerations. Measures that reduce costs and relieve budgetary strains will automatically ease the ability of governments to undertake desired expenditures for which room had not previously been found in the budgets. It should be emphasized that such offsetting expenditures do not necessarily contradict the validity or the purposes of the arms controls. Surely the effort to obtain higher quality and better trained military personnel, more reliable operating procedures, improved communications, and more safeguards against accidents, have a claim to legitimacy even in an atmosphere of arms control.

Arms Control and Military Costs

There is a sense in which arms control can be thought of as "saving money." It is this. Many of the immediate security ends that arms control might serve could, to greater or lesser extent, be accomplished through unilateral actions. Measures to improve intelligence and warning, to reduce false alarms and accidents, to improve discipline, to make command and communication arrangements more secure or strategic forces more secure, or to slow the tempo of decisions, can be taken unilaterally; and they almost certainly cost money. In a sense, the advantages of cooperative measures undertaken with potential enemies is that they may be more effective in achieving some of these security objectives. So one can think of arms control as a way of increasing certain kinds of military effectiveness, namely those kinds that it may be in the joint interest to increase. At the same time, arms control is aimed at *reducing* certain kinds of military capabilities, and in that sense is aimed

at making it more expensive—if possible, prohibitively expensive—to achieve those kinds of military capabilities that would enhance the fear and likelihood of attack.

Adaptation to Budget Reductions

The foregoing remarks were intended to caution against expecting either the troubles or the benefits that one would expect to be associated with a substantial reduction in the federal budget. But we must consider, too, the possibility that disarmament will proceed far enough to outweigh the foregoing considerations and to make some of them irrelevant, so that the national defense budget does, in fact, eventually fall to a small fraction of its earlier level. What are the consequences in this case?

The point most deserving of emphasis is that the process will probably not be sudden—at least not if the disarmament is achieved through ordinary negotiation and not as a result of a crisis or war itself. A reduction of the federal budget by some tens of billions of dollars from one year to the next would, of course, be an enormous perturbation for the economy. The same reduction spread over four or eight years, especially if the process were anticipated, would be an event of a different order.

In either case, the economic problems can be grouped into three main classes.

First is the problem of maintaining a prosperous economy, avoiding recession or severe depression. This is essentially a matter of seeing that the aggregate demand for current output in the economy as a whole—the aggregate level of expenditure for the national product—is not reduced with the decline in the defense budget. The main offsetting components would be: (1) consumer expenditure, which would certainly respond to the sizable tax reductions that could correspond to the reduced defense outlays; (2) increased government outlays at the federal, state, and local levels, on programs that are presently curtailed

by the budgetary strain that defense programs already impose; and (3) an increased rate of investment in plant and equipment, highways and buildings, residential housing, and so forth, by private businesses and individuals. The latter could be facilitated by a monetary policy adapted to the reduced federal budget, as well as by direct federal loan programs such as are already involved in the fields of housing and highways, or by federal grants to local authorities.

The most desirable mix of these offsetting expenditures, and the appropriate set of tax, monetary, and other policies to bring them about, need not be settled or even suggested in a book on arms control. But it seems beyond doubt that adequate policies could be devised, and that, on balance, the nation should be better off for being able to spend substantially less of its current income on national defense needs and more on its productive assets and levels of current consumption.

The second main problem area is that of the "readjustment period." Assuming that reasonably full employment is maintained through and after the transition, there will nevertheless be a substantial shift in production out of defense goods and into other goods, and a substantial shift of personnel out of military and related services and into the civilian economy. Shifts of this kind occur continually; but the magnitude involved in a twenty-to forty-billion-dollar reduction in defense outlays would be substantial. It would be about as great as the shift that occurred during the early 1950's, when resources were drawn into defense programs. It would be a great deal less than the shift that occurred after V-J day when the economy shifted within the space of two years from a level of defense outlay enormously greater than our present one to a level about half the present one. There is no strong reason to suppose that the shock of transition under a program of gradual or even fairly rapid disarmament would be a serious threat to the American economy. This is not to say that real difficulties would not occur, requiring careful analysis and timely measures.

The third range of problems is more difficult to characterize. It involves the fact that a large part of technological development, scientific research, and education within the United States is financed or stimulated by defense programs. Many far-reaching technological advancements are by-products of military programs. Not all of the resources devoted to defense efforts are a net loss to the rest of the economy. If this fact is ignored, and if the reduced requirements for defense should lead to the greater absorption of economic resources into current consumption, housing, and ordinary investment, an important component in our long-run economic growth may have been lost. It is hard to imagine that this component depends on a national-defense motivation; but unless we keep this component in mind, and make sure that comparable inducements to research and development are provided for in the period of lesser defense outlays, we shall have suffered an adverse impact of disarmament through negligence.

There are many of these intangible relations between present defense programs and the rest of the economy. Some are certainly hindrances and nuisances, some certainly valuable stimuli. These have not received the systematic study that they deserve. It would be a real challenge to our national ingenuity to see that, relieved of the necessity to spend large amounts of our national product on defense needs, we could provide even greater, rather than diminished, incentives to technological improvement, superior education and research, and economic growth.

29. Can We Prosper Without Arms?

By SEYMOUR HARRIS

The authors of the preceding selection hold that arms control would not reduce defense expenditures, at least in the early years. If this is true, the problem dealt with in this essay would not seem to be an urgent one. There are, however, two good reasons for examining the possible economic impact of cutbacks in defense spending. First, the Communists have repeatedly asserted that our economy would collapse if it were not for the arms race, although there has been some modification of this contention in the past few years. Second, both management and labor in the defense industry are rightly concerned about possible shifts in defense spending—up, down, or sideways. Industrial planning is based upon projections of the probable market situation five to ten years in the future.

In this essay, Mr. Harris concludes that the U.S. economy could continue to prosper with a drastic cut in defense spending if we planned in advance for this contingency. To cushion such a cutback, he recommends a heavy tax cut and the allocation of as much as \$12 billion for Government programs in education, housing, urban renewal, power, conservation, highways, hospitals, health services, and social security.

"Can We Prosper Without Arms?" *The New York Times Magazine*, November 8, 1959, pp. 20, 22, and 24. Reprinted with the permission of the author and the publisher.

A CLICHÉ of Communist propaganda is that the “ruling circles” of the United States do not really want an end to the arms race because a large cutback in armaments would cause a depression.

The present defense budget of \$46 billion—more than half of the total Federal budget and the equivalent of about 10 per cent of our gross national product—is obviously a factor of major importance in the economy. Can we prosper without it?

Yes, I believe we can. Prosperity is not basically dependent on defense contracts, but a sudden, sharp cut in defense spending would be a real, if temporary, shock to the economy. Effective Government action would be needed to cushion such a shock; and, so far as I know, the Government is not now prepared with an economic program to meet this kind of emergency.

What does our history show about the connection between defense spending and the level of economic activity? The War of 1812, the Civil War, and World War I were followed, in each instance, by heavy cuts in military outlays, a drop of prices of 30 to 40 per cent, and depressions. It is true, too, that a low rate of arms production accompanied the great depression of the Thirties, though it would be hard to argue any cause-and-effect relationship.

It can be argued, however—and has been, particularly by

Republicans—that we did not really emerge from the Great Depression until World War II arms production began. As late as 1939, after six and a half years of the New Deal, unemployment was still at 9.5 million, or about 17 per cent of the labor force. Then came defense and war, and by 1944, military purchases had risen to \$88 billion and unemployment had fallen to 1 million.

Disarmament with Prosperity: 1946–49

Yet, despite disarmament, this boom continued after World War II. In 1946, purchases of goods and services for defense dropped by the spectacular figure of \$57 billion, equivalent to 27 per cent of our gross national product. From 1946 to 1950, the Federal Government averaged only \$14 billion yearly on purchases for national defense. Yet—to the great surprise of many who had predicted a postwar depression—the national income rose substantially in those years.

This success was an exception. It was, in large part, a result of wartime controls and shortages. Despite enormous Government outlays during the war, price inflation was held to only 25 per cent, precluding a large deflation afterward. Controls and shortages of goods kept down private purchasing and a large backlog of demand accumulated. The release of money locked up during the war gave the postwar economy a lift to counteract the massive drop in Government spending.

Then, after zooming to \$50 billion in the Korean War years, Government outlays for security dropped by \$10 billion in 1954–55—and this time a brief recession did develop. A tax cut of \$7–8 billion eased the recession but did not prevent it.

If we treat the years from 1941 to the present as a whole, we find again that a period of record prosperity coincided with a period of heavy military outlays. Of a gross national product of \$5.25 trillion in eighteen years, purchases of goods and services for defense and war accounted for more than \$700 billion. About one dollar out of seven went for war or preparation for war and this expenditure was undoubtedly a stimulus to the economy.

Problem Is More Complex Now

The question that faces us now becomes this: If we were to reduce drastically our outlays for defense, could we expect to repeat the heartening experience of 1946–49, or would we repeat what appears to be the more “normal” pattern of disarmament recession?

There are those who argue, on the basis of the post–World War II prosperity, that we can have prosperity with disarmament and without taking any special measures beyond a tax cut. The money saved by taxpayers, they argue, will flow automatically into increased consumption and non-defense investment, while industrial research continues to develop new and improved products to keep the economy dynamic and employment high.

I do not believe it is as simple as that. For one thing, there were the special circumstances just after World War II that do not obtain today—the controls and shortages of the preceding years and the pent-up savings that created the postwar boom. Today, in contrast, we are in period of high spending.

Moreover, our only large tax cut since 1952 on the whole favored those taxed at the highest rates, the well-to-do and the business firms. This kind of tax cut would heighten the probability that tax savings will be hoarded, or be used disproportionately for investment and inadequately for consumption goods.

A high rate of investment would increase the nation's productive capacity. This is all to the good, for it improves our capacity to fight the Cold War. But our private economy is faced with the tough problem of selling what it can produce. This is the reason for Madison Avenue. We turn out more and more goods with a given supply of labor, capital, and management. In one hour of work we produce more than five times as much as in 1880. One American farmer feeds more than twenty people; it was not so long ago that one farmer fed only five people.

Further, we do not have a “given” supply of labor; each year we add close to a million new workers. This, plus rising pro-

ductivity, means that in each year of the next decade our output should increase by \$15 or \$20 billion over the year before. We must take this additional amount of goods off the market each year if we are to avoid unemployment. I estimate that each \$8 billion of this increment which we fail to take off the market will mean one million unemployed.

Two Essential Measures

Today, Government purchases for defense take \$46 billion off the market yearly. Should this buying be curtailed, then the market demand for goods and services would have to rise by an amount roughly equal to the curtailment, in addition to the annual rise of \$15 or \$20 billion per year required to prevent unemployment. I do not believe that private spending will respond sufficiently, or with enough speed, to accomplish this.

Of course, our whole \$46-billion-per-year defense program is not going to evaporate overnight. But suppose that it is to be halved—a reasonable goal for a genuine disarmament agreement. How can we accommodate a \$23-billion reduction in the defense budget, plus the normal \$15–20-billion increase in output, without severe dislocation and unemployment?

First, I suggest that about half of the defense saving, or roughly \$11 billion, be returned to the public as a tax cut.

I make this suggestion largely on grounds of equity. A wind-fall of \$23 billion is available. The taxpayer, now burdened with heavy payments, should receive some relief.

Second, the remaining \$12 billion, retained by the Treasury, should be spent directly on nondefense Government programs.

I urge this Government spending policy for three reasons. First, to cushion the shock of a defense cutback will require prompt action; provided it is planned for in advance, the switch-over to nondefense Government spending can be accomplished quickly or timed to coincide with the decline in defense spend-

ing. Second, a rise in welfare outlays by the Government is of primary benefit to the lower-income groups—and these certainly deserve to share in any benefits deriving from a thaw in the Cold War and a reduction of the arms burden. Third, there is a clear national need for greater welfare outlays.

Increased Spending for Social Needs

Under the pressure of Cold War costs and budgetary stress, the Government has been underspending for years in such vital areas as education, urban renewal, housing, power, pollution, irrigation, conservation, flood control, navigation, forestation, airport improvement, highways, hospitals and health services, and social security. In a recent six-year period, Federal welfare outlays (exclusive of public insurance benefits, as for the old and the unemployed) rose by only \$1.5 billion, or little more than 1 per cent of the increase in the gross national product.

Today, 10 million school children are in crowded schools which are often firetraps. In the next decade, \$10 billion annually will be needed for our schools, and \$7 billion more for our colleges. No one now seems to know where this money is coming from.

At the present rate of slum clearance it will be many generations before we treat even the slums now existing, let alone those to be created. Against a need for 2 million housing units yearly, we now build only 1.2 million. Benefits of \$70 per month under Old Age and Survivors' Insurance are not enough, nor is unemployment compensation adequate.

These and other social needs offer ideal substitutes for defense spending to help keep employment and output high. In part, the outlays would relieve state and local governments, now in serious financial condition because of rising demands for public services. Several years ago, the President estimated their construction needs at \$200 billion in ten years; actual outlays were at less than half that rate.

Regional Problems

As defense spending is reduced, some cities and regions will feel the impact more keenly than others. Military outlays are heavily concentrated in industrial areas, such as Michigan and the Great Lakes region and New England. (While New York firms receive the largest share of military prime contracts, the actual expenditures these call for are often made elsewhere.) These states and regions would need special help.

Since, under my proposal, the Federal Government would continue to spend a substantial sum in place of part of its defense outlay, it can favor these areas above others. Another approach is the Area Development Program, which the Administration, as well as a number of Senators, led by Senator Douglas, has sponsored. A substantial program would be needed to yield funds for planning and training of workers for new jobs and to contribute capital as a means of attracting new industry. Any improvement in the unemployment compensation program, such as was suggested in a bill introduced by Senator Kennedy last year, would also help the newly depressed areas to make an adjustment.

If the policies outlined here are adopted, we may confidently expect that substantial cuts in military outlays will not prove disastrous to the economy. But these policies require planning now, to avoid delay when the time comes. We should prepare tax cuts, not wait to consider them only in response to falling income. And the Government should now begin to prepare a broad program of increased nondefense spending, in anticipation of the day when swords may indeed be beaten into plowshares.

Appendixes A and B

A. Participants in the Nineteenth American Assembly

MILDRED ADAMS, New York.

FRANK ALTSCHUL, New York.

DILLON ANDERSON, Baker, Botts, Andrews & Shepherd, Houston.

PAUL E. AUERSWALD, Harriman Scholar, Columbia University.

HERBERT BARCHOFF, President, Eastern Rolling Mills, New York.

HURD BARUCH, Harriman Scholar, Columbia University.

WILLIAM BENTON, Publisher & Chairman, Encyclopædia Britannica, Connecticut.

LINCOLN P. BLOOMFIELD, Center for International Studies, Massachusetts Institute of Technology.

CHARLES G. BOLTE, The Viking Press, New York.

DONALD G. BRENNAN, Lincoln Laboratories, Massachusetts Institute of Technology.

COURTNEY C. BROWN, Dean, Graduate School of Business, Columbia University.

A. D. BRUCE, Lt. Gen. (USA Retired), Chancellor, University of Houston, Texas.

ALASTAIR BUCHAN,* Director, The Institute for Strategic Studies, London.

ARTHUR L. BURNS, Australian National University, Canberra.

THOMAS D. CABOT, Chairman of the Board, Cabot Corporation, Boston.

JEFFERY COHELAN, Representative from California, Congress of the United States.

BENJAMIN V. COHEN, Washington, D. C.

JOHN L. COOPER, Associate Director, Collective Bargaining Consultants, Los Angeles.

THE REV. E. A. CONWAY, S.J., The Creighton University, Omaha.

GUY E. CORIDEN, Administrator, The President's Commission on National Goals, Washington, D. C.

JOHN COWLES, President, *The Minneapolis Star & Tribune*, Minnesota.

* Delivered formal address.

- MARRINER S. ECCLES, Chairman, First Security Corporation, Salt Lake City.
- LAWRENCE S. FINKELSTEIN, Vice President, Carnegie Endowment for International Peace, New York.
- ADRIAN FISHER,* U. S. Disarmament Administration, Department of State, Washington, D. C.
- WILLIAM FRYE, Chief, United Nations Bureau, *Christian Science Monitor*.
- T. KEITH GLENNAN, President, Case Institute of Technology, Cleveland.
- JOHN GOLDMARK, Rancher, Member of State Legislature, Okanogan, Washington.
- EDMUND A. GULLION, Deputy Director of the U. S. Disarmament Administration, Department of State, Washington, D. C.
- ARTHUR T. HADLEY, New York.
- MAX HARRELSON, The Associated Press, New York.
- LOUIS HENKIN, Professor of Law, University of Pennsylvania.
- HUBERT HUMPHREY,* United States Senator from Minnesota.
- PHILIP JACOB, Professor of Political Science, University of Pennsylvania.
- MILTON KATZ, Director, International Legal Studies, Harvard University.
- JOHN KERNOCHAN, Director, Legislative Drafting Research Fund, Columbia University.
- JAMES KING, Institute for Defense Analyses, Washington, D. C.
- THE RT. REV. C. J. KINSOLVING, III, Bishop of New Mexico and Southwest Texas.
- ALLAN KLINE, Western Springs, Illinois.
- FRED KORTH, President, Continental National Bank, Fort Worth.
- ADDISON LANIER, Director, Directorate of Disarmament and U.N. Affairs, U. S. Department of Defense, Washington, D. C.
- ROBERT LEE, Managing Editor, *San Francisco News-Call Bulletin*, California.
- ERNEST W. LEFEVER, The Washington Center of Foreign Policy Research, Washington, D. C.
- COLONEL G. A. LINCOLN, Head, Department of Social Sciences, U. S. Military Academy, West Point.
- H. R. LOONEY, Harriman Scholar, Columbia University.
- WALTER MILLIS, Center for the Study of Democratic Institutions, New York.
- PHILIP E. MOSELY, Director of Studies, Council on Foreign Relations, New York.
- ROBERT OPPENHEIMER, Institute for Advanced Study, Princeton University.

* Delivered formal address.

LESLIE PAFFRATH, President, The Johnson Foundation, Racine.

JOHN G. PALFREY, Dean, Columbia College.

WALTER M. RINGER, SR., Chairman, Foley Manufacturing Company, Minneapolis.

ALVIN RUBENSTEIN, University of Pennsylvania.

HYMAN J. SCHACHTEL, Rabbi, Congregation Beth Israel, Houston.

ELDER L. SHEARON, JR., President, The Southern Co., Inc., Memphis.

HENRY D. SMYTH, Chairman, University Research Board, Princeton University.

RAYMOND J. SONTAG, Department of History, University of California, Berkeley.

JEROME H. SPINGARN, National Planning Association, Washington, D. C.

PHILIP SPORN, President, American Electric Power Service Corporation, New York.

SHEPARD STONE, The Ford Foundation, New York.

HERBERT B. THATCHER, Major General, USAF, Special Assistant to the Joint Chiefs of Staff for Disarmament Affairs, Washington, D. C.

ELWOOD N. THOMPSON, President, The First Trust Company of Lincoln, Nebraska.

HOWARD VOLLUM, President, Tektronix, Inc., Beaverton, Oregon.

TRACY S. VOORHEES, Washington, D. C.

WATSON W. WISE, Petroleum Producer, Tyler, Texas.

B. Participants in the European-American Assembly

Joint Chairmen

DR. HENRY M. WRISTON, President, The American Assembly, Columbia University, New York.

MR. ALASTAIR BUCHAN, Director, The Institute for Strategic Studies, London.

Speakers

THE HON. HUBERT HUMPHREY, Chairman, Senate Subcommittee on Disarmament, Washington, D.C.

MONSIEUR JULES MOCH, Leader of the French Disarmament Delegation since 1951, Paris.

THE RT. HON. DAVID ORMSBY-GORE, Minister of State, The Foreign Office, 1956-61, London.

Participants

- MR. ALEXANDER AKALOVSKY, U.S. Disarmament Administration, Washington, D.C.
- HERR RICHARD BALKEN, Disarmament Advisor, Foreign Office, Bonn.
- MR. BERNARD G. BECHHOEFER, Advisor to the U.S. Disarmament Commission Delegations, 1946-58, Washington, D.C.
- MONSIEUR BERNARD BEGUIN, Editor, *Le Journal de Genève*, Switzerland.
- DR. EMILE BENOIT, Associate Professor of International Business, Columbia University, New York.
- MONSIEUR HENRI BERNARD, Professor, Ecole Royale Militaire, Brussels.
- DR. LINCOLN P. BLOOMFIELD, Director, Arms Control Project, Center for International Studies, M.I.T., Cambridge, Mass.
- DR. ROBERT R. BOWIE, Director, Center for International Affairs, Harvard University, Cambridge, Mass.
- MR. ANDREW BOYD, Assistant Editor, *The Economist*, London.
- DR. COURTNEY C. BROWN, Dean of the Graduate School of Business Administration, Columbia University, New York.
- MR. HEDLEY BULL, Lecturer in International Relations, London School of Economics, London.
- SIGNOR F. L. CAVAZZA, Editor, *Il Mulino*, Milan.
- THE HON. JEFFERY COHELAN, Democratic Congressman from California.
- DR. WILHELM VON CORNIDES, Director, Institute of International Affairs, Bonn.
- MONSIEUR ADRIAN CUNY, Disarmament Advisor, Quai d'Orsay, Paris.
- MR. JOHN DANSTRUPP, Editor, *Politiken*, Copenhagen.
- THE HON. FRITZ ERLER, Deputy Leader of the Social Democratic Party, Bundestag, Bonn.
- MR. JOHN H. FERGUSON, State Department Policy Planning Staff 1949-53; International lawyer, Paris.
- MONSIEUR ANDRE FONTAINE, Foreign Editor, *Le Monde*, Paris.
- MR. WILLIAM FRYE, *The Christian Science Monitor*, Boston.
- CONTROLEUR-GENERAL PIERRE GENEVEY, Ministry of Defense, Paris.
- MR. RICHARD GOOLD-ADAMS, Vice-Chairman of the Council, Institute for Strategic Studies, London.
- MR. MAX HABICHT, International lawyer, Geneva.
- MR. ARTHUR HADLEY, Author of *The Nation's Safety and Arms Control*, New York.
- MR. HENRY HAINWORTH, Head of the Disarmament Department, Foreign Office, London.
- DR. LOUIS HENKIN, Professor of Law at the University of Pennsylvania, Philadelphia.

- HERR OSWALD HIRSCHFELD, Foreign Editor, Süddeutsche Rundfunk, Stuttgart.
- MR. JOHN HOLMES, Director, Canadian Institute for International Affairs, Ottawa.
- MR. MICHAEL HOWARD, Reader in War Studies, Kings College, London.
- DR. JOSEPH E. JOHNSON, President, The Carnegie Endowment for International Peace, New York.
- MR. EDMUND H. KELLOGG, Special Assistant to the Director, U. S. Disarmament Administration, Washington, D.C.
- MR. JAMES E. KING, Associate Director of Research, Institute for Defense Analyses, Washington, D.C.
- DR. KLAUS KNORR, Professor of Economics and Associate Director of the Center of International Studies, Princeton University, Princeton, N. J.
- MAJOR GENERAL ERIK KRACH, Conservative Member of Parliament; former Chief of the Danish General Staff, Copenhagen.
- DR. ARTHUR LARSON, Professor of Law and Director of the World Rule of Law Center, Duke University, Durham, North Carolina.
- DR. ERNEST W. LEFEVER, Institute for Defense Analyses, Washington, D.C.
- MONSIEUR MICHEL LEGENDRE, Disarmament Advisor, Quai d'Orsay, Paris.
- COLONEL GEORGE A. LINCOLN, Professor and Head of the Department of Social Science, United States Military Academy, West Point, N. Y.
- MR. MALCOLM MACKINTOSH, Consultant in Soviet Affairs to the Institute for Strategic Studies, London.
- MR. WALTER H. MALLORY, Retired executive director and member of the Board of Directors of the Council on Foreign Relations, New York.
- LT. GENERAL T. E. MATHON, Director, Netherlands Defence College, The Hague.
- DR. NILS ORVIK, Historian, Ministry of Defence, Oslo.
- MR. JOHN G. PALFREY, Dean of Columbia College, New York.
- MR. MOREHEAD PATTERSON, Chairman, American Machine and Foundry Company, Washington, D.C.
- THE RT. REV. JAMES A. PIKE, Bishop, Diocese of California, Protestant Episcopal Church, San Francisco, California.
- THE HON. LUCIEN RADOUX, Chambre des Députés, Brussels.
- DR. KLAUS RITTER, Government official, Munich.
- DR. JOHN SANNESS, Director, Norwegian Institute of International Affairs, Oslo.
- MR. ADOLPH W. SCHMIDT, Vice-President of T. Mellon & Sons, Pittsburgh, Pennsylvania.

- GENERAL CORTLANDT VAN RENSSELAER SCHUYLER, Executive Assistant to the Governor of New York. Chief of Staff of SHAPE, 1953-59, Albany, New York.
- DR. URS SCHWARZ, Foreign Editor, *Neue Zürcher Zeitung*, Zurich.
- THE HON. BO SIEGBAHN, Head of the Northern Department, Swedish Ministry of Foreign Affairs, Social Democratic Member of Parliament, Stockholm.
- MR. JOSEPH E. SLATER, Deputy-Assistant Secretary of State for Educational and Cultural Affairs; Staff, Ford Foundation's International Affairs Program, 1957-60, Washington, D.C.
- DR. THEO SOMMER, Foreign Affairs Editor, *Die Zeit*, Hamburg.
- MR. CHARLES STELLE, Deputy U.S. Representative, Nuclear Test Conference, Washington, D.C.
- THE RT. HON. JOHN STRACHEY, Labour Member of Parliament. Secretary of State for War, 1950-51, London.
- MONSIEUR JACQUES VERNANT, Director, Centre d'Etudes Politiques Etrangères, Paris.
- DR. B. H. M. VLEKKE, Secretary General, Netherlands Society for International Affairs, The Hague.
- MR. DANA WILGRESS, Joint Chairman of Canadian-American Joint Defence Board, Ottawa.
- DR. A. E. YALMAN, Editor, *Hur Vatan*, Istanbul.
- THE RT. HON. KENNETH YOUNGER, Director, Royal Institute of International Affairs, London.

Arms and Arms Control: An Annotated Bibliography

THIS selected list of books, pamphlets, and periodical literature is designed to introduce the reader to the growing volume of recent writing on national security and arms control. Several titles dealing with the period between World Wars I and II are also listed. An attempt has been made to include authors representing a wide variety of approaches and perspectives. Both scholarly and more popular sources have been drawn upon. Highly specialized works and titles not easily available have for the most part been omitted.

The annotation indicates the character of the entry, when not obvious from the title, and in many cases also the viewpoint or position of the author. Since this bibliography is selective, the reader who wants to probe more deeply into some aspect of the problem is referred to the last section, which lists other bibliographies.

This bibliography draws heavily upon *Disarmament, Arms Control and National Security: A Basic Bibliography*, first published by the U.S. Disarmament Administration in April, 1961 ("Department of State Publication," No. 7193), which the present compiler, in his capacity as a consultant to the State Department, helped to prepare.

For convenience, the titles are numbered consecutively and

are arranged in twelve categories corresponding roughly to the organization of this book:

- A. General Sources
- B. U.S. Government Documents (General)
- C. The Political and Military Context
- D. The Soviet Approach
- E. The Impact of Technology
- F. Approaches and Proposals
- G. Inspection, Control, and Sanctions
- H. The Nth-Country Problem
 - I. Nuclear-Weapons Tests
 - J. Economic Aspects
- K. Ethics and Modern Warfare
- L. Bibliographies on Arms Control and Related Problems

A. GENERAL SOURCES

1. "Arms Control: A Special Report," *Business Week*, March 18, 1961, pp. 54-93.

A survey of the technical and political issues that dominate the current discussion of arms control, including a glossary of concepts and terms employed by specialists in the field. (Copies of this report are available at 50¢ per copy from the Reprint Department, *Business Week*, 330 West 42 Street, New York 36, N. Y.)

2. BARNET, RICHARD J. *Who Wants Disarmament?* Boston: Beacon Press, 1960, 141 pages.

A critical examination of Soviet and American views on disarmament and an appraisal and summary of the negotiations between the two powers since 1946.

3. BECHHOEFER, BERNHARD G. *Postwar Negotiations for Arms Control*. Washington, D.C.: The Brookings Institution, 1961, 641 pages.

A thorough and systematic study of disarmament negotiations since 1945, arranged both chronologically and according to the main issues that have persisted throughout the fifteen years covered in this work. The author has had twelve years of arms-control experience in the State Department. The book was written with the advice of a committee appointed by The Brookings Institution.

4. BRENNAN, DONALD G. (ed.). *Arms Control, Disarmament, and National Security*. New York: George Braziller, 1961, 475 pages.

This collection of twenty-three essays, with commentaries by four European observers (Raymond Aron, Alastair Buchan, Jules Moch, and Philip Noel-Baker), reflects a wide spectrum of current thinking on arms control. The contributors are: Donald G. Brennan, Robert R. Bowie, Roger Fisher, William R. Frye, Herman Kahn,

Edward Teller, Henry A. Kissinger, Kenneth E. Boulding, Thomas C. Schelling, Erich Fromm, Jerome B. Wiesner, Morton H. Halperin, Bernhard G. Bechhoefer, A. Doak Barnett, Paul M. Doty, Bernard T. Feld, Ithiel De Sola Pool, Lewis C. Bohn, Louis B. Sohn, Saville R. Davis, Hubert Humphrey, Richard S. Leghorn, and Arthur Larson. All but five of these essays were originally published in *Daedalus*, the Journal of the American Academy of Arts and Sciences, in the fall of 1960.

5. BULL, HEDLEY. *The Control of the Arms Race*. New York: Frederick A. Praeger, 1961, 229 pages.

Insisting on the primacy of security considerations, the unity of strategy and arms control, and the importance of technological innovation, the author explores many facets of the control problem. He does not recommend a plan. Mr. Bull had the sustained assistance of a British study group and benefited by the criticisms of an international arms-control conference held in September, 1960.

6. *Bulletin of Atomic Scientists*. Chicago, Ill.

This monthly magazine was founded in 1945. It carries many articles on both technical and political aspects of arms control by spokesmen in the United States and abroad.

7. COLLART, YVES. *Disarmament: A Study Guide and Bibliography on the Efforts of the United Nations*. (Published under the auspices of the World Federation of United Nations Associations.) The Hague: N. Nijhoff, 1958, 110 pages (in English and French).

An "impartial summary" of the positions of the various nations and the conclusions of U.N. deliberations on disarmament since 1945.

8. FRISCH, DAVID H. (ed.). *Arms Reduction Program and Issues*. New York: The Twentieth Century Fund, 1961, 162 pages.

A compilation of fourteen essays growing out of the 1960 Summer Study on Arms Control held in Boston. The book includes a proposed arms-reduction agreement, supporting papers, and an "alternate formulation." The contributors propose a limited cutback of nuclear-weapons stocks and a curtailment of delivery systems concurrent with an agreement prohibiting the further production of nuclear-weapons materials and limiting conventional military forces.

9. HADLEY, ARTHUR T. *The Nation's Safety and Arms Control*. New York: The Viking Press, 1961, 160 pages.

An introduction to "the new science of arms control" by a journalist who sat in on the 1960 Summer Study on Arms Control. This is not an official report. Includes a glossary and a fifteen-page bibliography.

10. HENKIN, LOUIS (ed.). *Arms Control: Issues for the Public*. Englewood Cliffs, N.J.: Prentice-Hall, 1961, 199 pages.

A collection of six papers prepared for the Nineteenth American Assembly held in May, 1961, at Arden House, Harriman, N. Y. The essays by William R. Frye, Robert R. Bowie, James E. King, Jr., and Jerome B. Wiesner deal with different aspects of arms control from an American perspective. Jacques Freymond offers a European view. The essay by Malcolm Mackintosh and Harry Willetts is a comprehensive review and analysis of Soviet dis-

armament policy. In his introduction, Mr. Henkin deals with the "citizen's interest" in arms control.

11. INSTITUTE FOR DEFENSE ANALYSES. *Lexicon of Terms Relevant to National Security Studies on Arms and Arms Control*. Annex I (including an Appendix) of *Proceedings of the Seminar on Deterrence and Arms Control, July 25-27, 1960*. Washington, D.C.: Institute for Defense Analyses, 1960 (IDA:SS [P-1]). 18 + 31 pages.

A compilation and analysis of professional terms used in discussions of arms and arms control within the framework of national security.

12. NATIONAL PLANNING ASSOCIATION. *Strengthening the Government for Arms Control*. Washington, D.C.: National Planning Association, July, 1960, 26 pages.

This study by the Association's Special Project Committee on Security Through Arms Control calls for "a permanently based body of experts . . . a flow of reliable information on political and scientific matters . . . a staff that can present facts, issues, and alternative proposals to the President," so that the U.S. can be more effective in negotiating than it has been in the past. (This study is also available as Senate Document No. 123, August, 1960.)

13. NOGEE, JOSEPH. *The Diplomacy of Disarmament*. (Pamphlet No. 526 in the series "International Conciliation.") New York: The Carnegie Endowment for International Peace, January, 1960, 68 pages.

The author discusses the changing scope and framework of disarmament negotiations since 1945, the technical and political aspects of the control problem, and the political objectives of arms-control negotiations.

14. SCHELLING, THOMAS C., and HALPERIN, MORTON H. *Strategy and Arms Control*. New York: The Twentieth Century Fund, 1961, 144 pages.

This book centers on the "potential security functions of arms control" and evaluates various control proposals. As such, it is a comprehensive summary of arms control as an aspect of national security. The authors maintain that "arms control is a rich and variegated subject whose forms and whose impact on security policy and world affairs have only been dimly perceived."

15. *Survival*. The Institute for Strategic Studies, London.

This bimonthly journal frequently carries articles and book reviews on arms control and related problems.

16. UNITED NATIONS SECRETARIAT. *Historical Survey of the Activities of the League of Nations Regarding the Question of Disarmament, 1920-1937*. United Nations, N.Y., 1951 ("U.N. Document A/AC.50/2," June 18, 1951), 187 pages.

17. WHEELER-BENNETT, J. W. *The Pipe-Dream of Peace: The Story of the Collapse of Disarmament*. New York: William Morrow and Company, 1935, 302 pages.

A historical examination of the causes for the failure of the World Disarmament Conference (1932-35).

B. U.S. GOVERNMENT DOCUMENTS (GENERAL)

Note: All these were published by the Government Printing Office, Washington, D.C.

Additional official documents are listed under subheads dealing with specific aspects of the arms problem.

18. *Department of State Bulletin.*

This bulletin, published weekly, carries important current speeches, policy statements, and proposals on arms control and related fields.

19. HERTER, CHRISTIAN A. *National Security with Arms Limitation.* ("Publications of the United States Department of State," Series S, No. 85.)

A major statement of the U.S. position by the then Secretary of State before the National Press Club, February 18, 1960.

20. "Official Report of the United States Delegation to the Conference of the Ten-Nation Committee on Disarmament, March 15–June 28, 1960," *Department of State Bulletin*, August 22, 1960, pp. 267–74.

21. U.S. CONGRESS, JOINT COMMITTEE ON ATOMIC ENERGY. *Technical Aspects of Detection and Inspection Controls of a Nuclear Weapons Test Ban.* May, 1960, 77 pages.

A "summary-analysis" of hearings held by the Special Subcommittee on Radiation and the Subcommittee on Research and Development, April 19–22, 1960. Includes a four-page glossary.

22. U.S. DEPARTMENT OF STATE. *A Chronology of the Development of United States Disarmament Policy: 1953–1960.* ("Historical Office Research Project," No. 502.) March, 1961, 39 pages.

23. ———. *Freedom From War: The United States Program for General and Complete Disarmament in a Peaceful World*, September, 1961, 19 pages.

The official statement of the U.S. comprehensive program for arms control and disarmament presented to the Sixteenth General Assembly of the United Nations.

24. ———. *Disarmament: The Intensified Effort: 1955–1958.* ("Publications of the United States Department of State," No. 7070.) October, 1960, 66 pages.

A brief summary of U.S. arms-control efforts since 1945, focusing on the 1955–58 period.

25. ———. *Documents on Disarmament, 1945–1959.* 2 vols. 1960, 1,644 pages.

The two volumes of this work contain a comprehensive collection of the most important postwar documents on disarmament and related problems. Arranged chronologically are all the significant proposals, U.N. resolutions, correspondence, and policy statements for the fifteen-year period under examination. (A supplementary volume containing documents issued in 1960 is also available.)

26. ———. *U.S. Participation in the U.N.* (Report by the President to Congress on the Government's participation in the U.N. and specialized agencies.)

The Report of the President to Congress has been issued annually since 1947. It includes a brief review of U.S. activities on disarmament within the U.N. and affiliated disarmament forums.

27. U.S. SENATE. *The Nature and Feasibility of War and Deterrence*. ("Senate Document," No. 101.) A study prepared by Herman Kahn, Physics Division, The RAND Corporation. January 20, 1960, 37 pages.

Summarizes some of the points discussed by the author in *On Thermonuclear War* (see entry No. 36); deals briefly with civil defense and arms control.

28. ———, COMMITTEE ON FOREIGN RELATIONS. *Disarmament and Security: A Collection of Documents, 1919–1955*. 1956, 1,035 pages.

This collection includes 239 documents in full or in part. They are divided into three groups: I. Disarmament: Historical Background: 1919–1945; II. Problems of Disarmament and Security; III. Related Action in Congress. Part II comprises more than half the book (590 pages).

29. ———. *Disarmament Developments*. Spring, 1960, 49 pages.

Includes testimony of Philip Farley and John N. Irwin II before the Disarmament Subcommittee; the Soviet proposals of September 18, 1959, and June 2, 1960; the Western proposal of June 27, 1960; and a chart comparing the four proposals.

30. ———, SUBCOMMITTEE ON DISARMAMENT. *Control and Reduction of Armaments*. (Final Report.) October 13, 1958, 663 pages.

This report of the Subcommittee on Disarmament covers its first three years. It includes correspondence between the Subcommittee Chairman, Senator Hubert H. Humphrey, and the various executive agencies concerned with the problem; previous Subcommittee reports; and ten staff studies.

31. ———. *Disarmament and Foreign Policy*. 2 parts, 1959, 480 pages.

Report of hearings held by the Subcommittee on Disarmament in January and February, 1959, covering various facets of the arms-control problem. Among those who testified were Hans Bethe, Admiral Arleigh A. Burke, Philip Farley, James Fisk, William C. Foster, Carl Romney, General Maxwell Taylor, A. Doak Barnett, George F. Kennan, Henry Cabot Lodge, and Arnold Wolfers.

32. ———. *Handbook on Arms Control and Related Problems in Europe*. May, 1959, 56 pages.

Includes excerpts and summaries of both official and unofficial proposals on European security, arms control, and the German question. United States, Western European, and Soviet bloc views are represented.

C. THE POLITICAL AND MILITARY CONTEXT

33. BRODIE, BERNARD. *Strategy in the Missile Age*. Princeton, N.J.: Princeton University Press, 1959, 423 pages.

In this work, based on a critical evaluation of air-power doctrines, the author examines the problem of deterrence at both the strategic and the "limited-war" levels. He concludes that the U.S. should make a greater effort to "guarantee" the survival of its retaliatory

force and to develop "a real and substantial capability for coping with limited and local aggression by local application of force."

34. HAHN, WALTER F., and NEFF, JOHN C. (eds.). *American Strategy for the Nuclear Age*. Garden City, N.Y.: Anchor Books, Doubleday and Company, 1960, 455 pages.

A collection of thirty-three essays and articles on aspects of the current international situation—U.S. and Soviet objectives, strategies, and tactics; related military, political, economic, and psychological aspects of the Cold War. Includes articles by Bertram Wolfe, Henry A. Kissinger, Herman Kahn.

35. HUNTINGTON, S. P. *Instability at the Non-Strategic Level of Conflict*. (Special Studies Group, SM-2.) Washington, D.C.: Institute for Defense Analyses, October 6, 1961, 40 pages.

For the immediate future, says the author, strategic stability may well be the most effective means of arms control. To maintain stability at lower levels will require major innovations in U.S. policies within other countries.

36. KAHN, HERMAN. *On Thermonuclear War*. Princeton, N.J.: Princeton University Press, 1960, 651 pages.

An informed and detailed analysis of the military problems created by modern weapons and of the strategic choices open to the United States. The author recommends numerous improvements in U.S. military capabilities, but concludes that extensive arms-control measures will "almost undoubtedly" be required "if we are to reach the year 2000, or even 1975, without a cataclysm of some sort. . . ."

37. KAUFMANN, W. W. (ed.). *Military Policy and National Security*. Princeton, N.J.: Princeton University Press, 1956, 274 pages.

A collection of eight essays on military-policy problems in an age of nuclear parity, including the requirements of deterrence, strategic doctrines for nuclear war, limited war, and alliance policy. Contributors are Gordon A. Craig, Roger Hilsman, and Klaus Knorr.

38. KISSINGER, HENRY A. *The Necessity for Choice*. New York: Harper and Brothers, 1961, 370 pages.

Examines a full range of national-security problems—the nature of deterrence, limited war, alliance policy, negotiations with the Soviet Union, and arms control. The author says the "goal of responsible arms-control measures must be to determine, free from sentimentality, not how to eliminate retaliatory forces but how to maintain an equilibrium between them."

39. SCHELLING, T. C. *The Stability of Total Disarmament*. (Special Studies Group, SM-1.) Washington, D.C.: Institute for Defense Analyses, October 6, 1961, 51 pages.

The author maintains that "total disarmament" does not rule out either war or rearmament. "The power and the knowledge to make war and . . . to mobilize and rearm, always exist."

40. ———. *The Strategy of Conflict*. Cambridge, Mass.: Harvard University Press, 1960, 309 pages.

In a series of related essays, the author applies elements of game theory to the analyses of military and political strategic problems.

A specialized appendix deals with the relationship between nuclear weapons and limited war.

41. SNYDER, GLENN H. *Deterrence and Defense: Toward a Theory of National Security*. Princeton, N.J.: Princeton University Press, 1961, 294 pages.

The author examines current strategic concepts and advances a theory by which proposals for achieving the "twin goals of deterrence and defense" can be weighed. This is an advanced book for serious students of national-security policy.

42. STRAUSS-HUPÉ, ROBERT. "The Disarmament Delusion," *United States Naval Institute Proceedings*, February, 1960, pp. 43-47.

The author holds that progress toward disarmament is dependent upon profound transformations in the Soviet system. In his view, "the West cannot gamble its security on a disarmament agreement until it faces across the conference table men who represent an open political system, are responsive to the popular will, and have forsworn aggression."

43. WOHLSTETTER, ALBERT. "The Delicate Balance of Terror," *Foreign Affairs*, January, 1959, pp. 211-34.

The author stresses that effective deterrence is not the automatic result of nuclear parity; it will require substantial efforts to develop, maintain, and protect the U.S. retaliatory (deterrent) force. Limited arms-inspection and control agreements are regarded as potentially useful in reducing the likelihood of a sizable surprise attack.

44. TURNER, GORDON B., and CHALLENGER, RICHARD D. (eds.). *National Security in the Nuclear Age: Basic Facts and Theories*. New York: Frederick A. Praeger, 1960, 293 pages.

This book of essays focuses on the military and political aspects of national security. The contributors are Martin Lichterman, James E. King, Jr., Robert E. Kuenne, Paul Y. Hammond, Robert W. Coakley, and the editors.

D. THE SOVIET APPROACH

45. BARNET, RICHARD J. "The Soviet Attitude on Disarmament," *Problems of Communism*, May-June, 1961, pp. 32-37.

A discussion of the primary political and ideological considerations weighing upon Soviet policy-makers as they attempt to balance "the risks of the arms race against the opportunities of Communist aggrandizement in a supercharged world."

46. DINERSTEIN, HERBERT S. *War and the Soviet Union: Nuclear Weapons and the Revolution in Soviet Military and Political Thinking*. New York: Frederick A. Praeger, 1959, 268 pages.

In this analysis of nuclear weapons and the revolution in Soviet military and political thinking, the author concludes that the "guiding Soviet principle is readiness to fight any kind of war in the most effective way, no matter what the relative likelihood of the different kinds of war."

47. GARTHOFF, RAYMOND L. *Soviet Strategy in the Nuclear Age*. New York: Frederick A. Praeger, 1958, 283 pages.

The author maintains that "the Soviets continue, in the thermo-nuclear era, to adhere essentially to the classical military strategic concept that the path to victory lies in the decisive defeat of the

enemy's armed forces," but they still "retain diversified capabilities" for both nuclear and limited wars.

48. KHRUSHCHEV, NIKITA S. *For Victory in Peaceful Competition with Capitalism*. New York: E. P. Dutton & Company, 1960, 784 pages.

This compilation of Khrushchev's 1958 speeches includes statements presenting the Soviet point of view on arms control, suspension of nuclear tests, Berlin, the division of Germany, and the status of Eastern Europe.

See also *Khrushchev in New York, a Documentary Record of Nikita S. Khrushchev's Trip to New York, September 19 to October 13, 1960, Including All His Speeches and Proposals to the United Nations and Major Addresses and Press Conferences*. New York: Crosscurrents Press, 1960, 286 pages.

49. MARSHALL, CHARLES BURTON (ed.). *Two Communist Manifestoes*. Washington, D.C.: The Washington Center of Foreign Policy Research, 1961, 108 pages.

An analysis of the texts of the statement issued in the name of the world Communist leaders who met in November, 1960, and the address by Premier Khrushchev of January 6, 1961, with an introduction and brief running commentary by the editor.

50. "Soviet Position on Disarmament." (A translation of the concluding chapter of *The U.S.S.R. and the Problem of Disarmament*. Moscow: Academy of Sciences of the U.S.S.R., 1959, 451 pages.) (Appendix C, *Disarmament, a Bibliographic Record 1916-1960*, prepared by the staff of the Army Library for the Office-Special Assistant to the Joint Chiefs of Staff for Disarmament Affairs, May 15, 1960.)

Summary of the official position of the Soviet Union on disarmament and a historical survey of disarmament negotiations from the Soviet viewpoint.

51. TALENSKI, N. "The Character of Modern War," *Survival*, January-February, 1961, pp. 16 ff. (Reprinted from the English edition of *International Affairs*, Moscow, October, 1960, pp. 23-27.)

Maj. Gen. Talenski points to the destructiveness of modern weapons and concludes: "War in a military-technical sense has outlived itself as a weapon of policy." He urges that the Soviets "struggle more stubbornly and perseveringly for the scrapping of all armament."

52. U.S. SENATE, COMMITTEE ON FOREIGN RELATIONS. *Attitudes of Soviet Leaders Toward Disarmament*. (Staff Study No. 8.) Washington, D.C.: Government Printing Office, 1957, 106 pp.

This study is based upon replies from experts on the Soviet Union to a questionnaire prepared by the Disarmament Subcommittee. (The pamphlet is reprinted in *Control and Reduction of Armaments* [Final Report], pp. 335-448; see entry No. 30.)

53. WOLFE, THOMAS W. "Soviet Strategy of Disarmament," *American Strategy for the Nuclear Age*, ed. Walter F. Hahn and John C. Neff. Garden City, N.Y.: Doubleday and Company, 1960, pp. 135-51. (See entry No. 34.)

An analysis of the Soviet positions on, and attitudes toward, disarmament and arms control in the context of Soviet foreign policy and Marxist-Leninist doctrine.

E. THE IMPACT OF TECHNOLOGY

54. NATIONAL PLANNING ASSOCIATION. *1970 Without Arms Control*. Washington, D.C.: National Planning Association, May, 1958, 69 pages.

This study by the Association's Special Project Committee on Security Through Arms Control examines present weapons and projects their development, in the absence of an arms-control agreement, to 1970. With each year, technological advances "make a fair and workable agreement harder to reach."

55. UNITED STATES ATOMIC ENERGY COMMISSION. *18 Questions and Answers about Radiation*. Washington, D.C.: Government Printing Office, 1960, 47 pages.

Provides concise answers in nontechnical language to questions asked by the layman about nuclear radiation and radioactivity. Includes pictures, charts, and diagrams. The May 17, 1960, memorandum to the President from the Chairman of the Federal Radiation Council is also included.

56. U.S. CONGRESS, JOINT COMMITTEE ON ATOMIC ENERGY. *Biological and Environmental Effects of Nuclear War*. Washington, D.C.: Government Printing Office, August, 1959, 58 pages.

A "summary-analysis" of the hearings held by the Special Subcommittee on Radiation, June 22-26, 1959. Includes discussion of survival measures.

57. U.S. SENATE, COMMITTEE ON FOREIGN RELATIONS. *Developments in Military Technology and Their Impact on U.S. Strategy and Foreign Policy*. (Study No. 8.) A study prepared by the Washington Center of Foreign Policy Research, December 6, 1959, 120 pages.

This study concludes that the U.S. and its allies can do much to enhance their security and lower the risk of general war by their own efforts, without formal agreements with the Communist bloc. Recommends arms-control agreements that would permit both sides to retain forces designed to deter a strategic nuclear attack.

58. ———, SUBCOMMITTEE ON DISARMAMENT. *Chemical-Biological-Radiological (CBR) Warfare and Its Disarmament Aspects*. Washington, D.C.: Government Printing Office, August 29, 1960, 43 pages.

"Since World War II, there has been little discussion in disarmament negotiations of the reduction and control of CBR weapons." This study relates such weapons to arms control and concludes that "presently known inspection measures for verifying any limitations on the production or development of chemical and biological weapons have a low degree of reliability."

F. APPROACHES AND PROPOSALS

59. CLARK, GRENVILLE, and SOHN, LEWIS B. *World Peace Through World Law* (2d ed.). Cambridge, Mass.: Harvard University Press, 1960, 387 pages.

The authors, writing from a legal perspective, propose a comprehensive and detailed plan leading in stages to general and complete disarmament. The plan includes a comprehensive inspection system and a strong United Nations military establishment.

60. HALPERIN, M. H. *A Proposal for a Ban on the Use of Nuclear Weapons*. (Special Studies Group, SM-4.) Washington, D.C.: Institute for Defense Analyses, October 6, 1961, 23 pages.

The author proposes that the U.S. and the U.S.S.R. enter into a formal agreement to ban the use of nuclear weapons, especially in a local war, and says such an agreement would be a net advantage to the U.S.

61. HINTERHOFF, EUGENE. *Disengagement*. London: Stevens & Sons, 1959, 445 pages.

A comprehensive review of various proposals for "disengagement" in Europe since 1945. The author also presents his own plan. Appendix 10 (pp. 414-42) contains a chronological chart of proposals for disengagement.

62. JACOB, PHILIP E. "The Disarmament Consensus," *International Organization*, Spring, 1960, pp. 233-60.

The author defines the areas of agreement that have emerged in past disarmament negotiations and identifies the main controversial issues that still remain.

63. JESSUP, PHILIP C., and TAUBENFELD, HOWARD J. *Controls for Outer Space and the Antarctic Analogy*. New York: Columbia University Press, 1959, 379 pages.

Explores the precedents and possibilities of finding lasting international agreement to prevent the extension of the arms race to outer space and Antarctica. The authors advocate broad international controls.

64. KATZ, AMRON H. "Good Disarmament—and Bad," *Air Force and Space Digest*, May, 1961, pp. 48-55.

The author suggests that a strategy of mutual deterrence is only a temporary measure that gives us time to work out durable, long-term arms-control arrangements. The very number and complexity of the obstacles to such arrangements, he says, should challenge us to increase our research and diplomatic effort.

65. KENNEDY, JOHN F. "Strategy for Peace," *The General Electric Defense Quarterly*, January-March, 1961, pp. 6-11.

A summary drawn from the writings of the President on matters relating to the role of military force in United States foreign policy.

66. KISSINGER, HENRY A. "Arms Control, Inspection and Surprise Attack," *Foreign Affairs*, July, 1960, pp. 557-75.

Suggests a first-step arms-control plan that would prevent either side from achieving a decisive advantage by cheating. An equilibrium between Soviet and Western forces, rather than total disarmament, should be the goal of any beginning arms-control plan.

67. MCCLELLAND, CHARLES A. (ed.). *Nuclear Weapons, Missiles and Future War*. San Francisco: Howard Chandler, Publisher, 1960, 235 pages.

A compilation of articles by American, British, and Soviet spokesmen representing a variety of approaches to arms and arms control.

The contributors include Paul Johnson, Carl Dreher, Joseph Alsop, Hubert H. Humphrey, Sidney Hook, Mulford Q. Sibley, Jerome D. Frank, The Rockefeller Brothers Fund panel, Alastair Buchan, R. H. S. Crossman, Philip Noel-Baker, Bertrand Russell, Morton A. Kaplan, A. V. Topchiev, and Nikita S. Khrushchev.

68. MILLIS, WALTER, and others. *A World Without War*. New York: Washington Square Press, 1961, 182 pages.

The substance of this book was originally published as four separate pamphlets by the Center for the Study of Democratic Institutions. In addition to two essays by Millis, the book contains "Community of Fear," by Harrison Brown and James Real, and "The Rule of Law in World Affairs," by William O. Douglas.

69. MOCH, JULES. "Toward a Disarmed Peace," *International Journal*, Spring, 1956, pp. 85-92.

This French statesman, a leading Western authority on arms control, recommends a step-by-step approach to controlled disarmament, with appropriate verification procedures at each stage. (His book *Human Folly: To Disarm or Perish?*, London: Victor Gollancz, 1955, elaborates his views.)

70. MORGENSTERN, OSKAR. "Goal: An Armed, Inspected, Open World," *Fortune*, July, 1960, pp. 93-95, 219-27.

The author argues that "a blindfold arms race is the least stable of all Cold War worlds." He advocates a more secure form of mutual deterrence, based on mutual possession of protected retaliatory forces, arms control, and the free exchange of scientific and technical information.

71. MURRAY, THOMAS E. *Nuclear Policy for War and Peace*. Cleveland, Ohio: World Publishing Co., 1960, 241 pages.

A former member of the AEC reviews our policies and recommends the continued development of small nuclear weapons. At the same time, he supports arms-control negotiations directed toward the elimination of high-yield nuclear bombs.

72. NOEL-BAKER, PHILIP. *The Arms Race: A Programme for Disarmament*. New York: Oceana Publications, 1960, 603 pages.

After a detailed review of the dangers of the "arms race" since 1945, the author proposes a comprehensive disarmament scheme involving military budgets, weapons, bases, and "demilitarized zones." He says the disarmament negotiations between world wars I and II provide valuable lessons for the control of conventional arms today.

73. RUSSELL, BERTRAND. *Common Sense and Nuclear Warfare*. New York: Simon and Schuster, 1959, 92 pages.

Lord Russell says the supreme danger is general nuclear war and that in such a war there will be no victor. Hence, war is no longer a rational instrument of national policy. He makes disarmament and territorial proposals to mitigate the danger of war.

74. WARBURG, JAMES P. *Disarmament: The Challenge of the Sixties*. New York: Doubleday and Company, 1961, 288 pages.

Pointing to the impotence of even the most powerful nation in the face of a nuclear attack, the author calls for complete disarmament under a world government. The political analysts and military experts identified with the present "arms-control consensus" are characterized by him as "latter-day exponents of *Realpolitik*."

G. INSPECTION, CONTROL, AND SANCTIONS

75. BLOOMFIELD, L. P. *The Politics of Arms Control: Troika, Veto, and International Institutions*. (Special Studies Group, SM-3.) Washington, D.C.: Institute for Defense Analyses, October 6, 1961, 28 pages.

In an arms-control inspection system, says the author, information gathering and transmission should not be subject to the veto of any party, and the right of veto should be restricted to the governing body of the disarmament authority.

76. FELD, BERNARD T., and others. *The Technical Problems of Arms Control*. (Program of Research No. 1.) New York: Institute of International Order, 1960, 30 pages.

A group of physical scientists—Bernard T. Feld, Donald G. Brennan, David H. Frisch, Garry L. Quinn, and Robert S. Rochlin—explore the technical problems of inspection, summarizing the status of present knowledge in the field. They identify and define areas where further research is needed.

77. HENKIN, LOUIS. *Arms Control and Inspection in American Law*. New York: Columbia University Press, 1958, 289 pages.

The author analyzes the domestic and legal implications of a hypothetical international inspection system established by an arms-control treaty and concludes that such inspection would not violate American laws or political institutions, although some security and secrecy policies of the Federal Government would have to be modified.

78. MELMAN, SEYMOUR. *Inspection for Disarmament*. New York: Columbia University Press, 1958, 291 pages.

With the support of twenty-one technical papers, Professor Melman assesses the technical requirements and limitations of effective inspection systems to detect violations of agreements limiting production or testing of nuclear, chemical, and biological weapons or missile delivery vehicles. He concludes that effective inspection is technically feasible for either limited or comprehensive disarmament agreements.

79. SCHELLING, THOMAS C. "Arms Control: Proposal for a Special Surveillance Force," *World Politics*, October, 1960, pp. 1-18.

During a serious crisis in which both the Soviet Union and the United States want to make each other understand that neither is preparing to strike, prior provisions to exchange and verify information would be very helpful in avoiding war.

80. "Surprise Attack and Disarmament," *Bulletin of the Atomic Scientists*, December, 1959, pp. 413-18.

The author discusses arms-control schemes for the prevention of surprise attack in terms of their ability to stabilize mutual deterrence. A longer version of this article appeared in Klaus Knorr (ed.). *NATO and American Security*. Princeton, N. J.: Princeton University Press, 1959.

H. THE NTH-COUNTRY PROBLEM

81. BALDWIN, HANSON W. "If Sixteen Countries Had the Bomb—." *The New York Times Magazine*, February 12, 1961, pp. 7, 68-71.

Mr. Baldwin holds that although the "proliferation of atomic-weapons stockpiles" will increase "at least the surface tension" and the "danger of some kind of 'accident,'" it will not necessarily make general war more likely.

82. MORGENSTERN, OSKAR. "The Nth-Country Problem," *Fortune*, March, 1961, pp. 136, 137, 205-8.

The author believes that the number of nuclear powers is bound to increase. This growth will be so destabilizing, he says, that 1961 may be regarded as "the era of stability."

83. NATIONAL PLANNING ASSOCIATION. *The Nth-Country Problem and Arms Control*. Washington, D.C.: National Planning Association, 1960, 61 pages.

Contains a technical report and a policy statement by the Association's Special Project Committee on Security Through Arms Control. The report says that twelve nations have the capacity to embark on a nuclear-weapons program in the near future. The statement maintains that the spread of nuclear weapons increases international instability and is dangerous.

I. NUCLEAR-WEAPONS TESTS

84. GEHRON, WILLIAM J. *Geneva Conference on the Discontinuance of Weapons Test*. ("Publications of the Department of State," No. 37.)

A "history of political and technical developments of the negotiations from October 31, 1958, to August 22, 1960." Reprinted from the *Department of State Bulletin*, September 26, 1960.

85. HUMPHREY, HUBERT H., and others. "The Nuclear Test Ban," *Bulletin of the Atomic Scientists*, March, 1960, pp. 82-92.

This symposium on the Geneva test-ban negotiations includes articles by Senators Hubert Humphrey, Clinton Anderson, Frank Church, and a brief statement by Adlai E. Stevenson.

86. MURPHY, CHARLES J. V. "The Case for Resuming Nuclear Tests," *Fortune*, April, 1960, pp. 148-50, 178-90.

Holds that "while diplomacy drones on at Geneva, U.S. military nuclear technology suffers, but with none of the expected safeguards that the suspension of tests was expected to bring. It is high time that a dangerous forfeit was retrieved."

87. NATIONAL PLANNING ASSOCIATION. *Establishing International Control of Nuclear Testing*. Washington, D.C.: National Planning Association, July 21, 1958, 20 pages.

This statement by the Association's Special Project Committee on Security Through Arms Control maintains that the test ban should be judged in terms of its effect on national security. "A nuclear-test suspension with inspection and controls will be a step toward more comprehensive arms-control measures."

88. ROBERTS, CHALMERS M. "The Hopes and Fears of an Atomic Test Ban," *Reporter*, April 28, 1960, pp. 20-23.

Analyzes the views of key foreign-policy and scientific advisers to the U.S. Government.

89. U.S. CONGRESS, JOINT COMMITTEE ON ATOMIC ENERGY. *Fallout from Nuclear Weapons Tests*. Washington, D.C.: Government Printing Office, August 1959, 42 pages.

A "summary-analysis" of the hearings held by the Special Subcommittee on Radiation, May 5-8, 1959. Also includes a statement of the 1959 Fallout Prediction Panel and a statement by Dr. W. F. Libby on "Ways of Reducing Worldwide or Offsite Fallout from Testing at a Given Level."

90. ———. *Technical Aspects of Detection and Inspection Controls of a Nuclear Weapons Test Ban*. Washington, D.C.: Government Printing Office, May, 1960, 78 pages.

A "summary-analysis" of the hearings held by the Special Subcommittee on Radiation and the Subcommittee on Research and Development, April 19-22, 1960. Includes a glossary and a list of witnesses who testified.

91. U.S. SENATE, COMMITTEE ON FOREIGN RELATIONS, SUBCOMMITTEE ON DISARMAMENT. Conference on the Discontinuance of Nuclear Weapons Tests. Washington, D.C.: Government Printing Office, October, 1960, 110 pages.

An analysis of the positions of the Soviet Union and the West from October, 1958, to August 1960. Includes a fifty-six-page chart indicating the points of agreement and disagreement.

J. ECONOMIC ASPECTS

92. BENOIT, EMILE. *Economic Adjustments to Disarmament*. New York: Institute for International Order, 1961, 24 pages.

This is one of a series of programs for research sponsored by the Institute. The author says disarmament is "fundamentally a political and not an economic issue." But economic analysis can help us to carry out decisions made on noneconomic grounds "with the least cost."

93. HUMPHREY, HUBERT H. "After Disarmament—What?" *Think Magazine* (IBM), January, 1960, pp. 2-5.

Senator Humphrey deals with the economic consequences of any substantial cut in defense spending in the event of an arms-control agreement. Such a transition, he says, can be successfully made only if the necessary private and government planning for it is begun now. He emphasizes the constructive social uses to which potential savings from reduced arms expenditures can be put.

K. ETHICS AND MODERN WARFARE

94. *A Christian Approach to Nuclear War*. New York: The Church Peace Mission, New York, 1961, 12 pages.

A statement by a group of Protestant theologians who urge the U.S. Government to adopt "a program of unilateral withdrawal from the nuclear-arms race" if no international arms-control agreement can be reached. "As an initial step, we advocate that the U.S. cease the testing and further production of atomic weapons and of chemical, biological, and radiological weapons."

95. COUNCIL ON RELIGION AND INTERNATIONAL AFFAIRS. *The Moral Dilemma of Nuclear Weapons*. New York, 1961, 78 pages.

Eleven brief essays by Protestant, Catholic, and Jewish spokesmen, written from different theological and political perspectives. Contributors include George F. Kennan, Kenneth W. Thompson, John C. Bennett, John Courtney Murray, John Cogley, Ernest W.

Lefever, and Steven S. Schwarzchild. All but one of the essays originally appeared in *Worldview*.

96. NAGLE, WILLIAM J. (ed.). *Morality and Modern Warfare: The State of the Question*. Baltimore, Md.: Helicon Press, 1960, 168 pages.

Eight essays by American Catholics of various professional backgrounds, including John Courtney Murray, Thomas E. Murray and William V. O'Brien. Includes a comprehensive bibliography (about 350 titles) of books, pamphlets, and articles.

97. NIEBUHR, REINHOLD. "The Cold War and the Nuclear Dilemma," *The Structure of Nations and Empires*. New York: Charles Scribner's Sons, 1959. (Also in *Crosscurrents*, Summer, 1959, pp. 212-24.)

The author insists that the "balance of terror" is both a symbol of our ultimate insecurity and a necessary condition of our present security. Since the "prospect of abolishing the nuclear threat completely is slight," we must pursue policies designed to mitigate the dangers in the uneasy military balance between the two blocs.

98. RAMSEY, PAUL. *War and the Christian Conscience: How Shall Modern War Be Conducted Justly?* Durham, N.C.: Duke University Press, 1961, 331 pages.

The author, a Protestant theologian, applies the traditional concept of the "just war" to the nuclear-missile age and concludes that counterforces warfare can be morally justified, but that "counter-people" war intentionally directed against population centers cannot be justified.

99. TUCKER, ROBERT W. *The Just War: A Study in Contemporary Doctrine*. Baltimore, Md.: The Johns Hopkins Press, 1960, 207 pages.

An analysis of the traditional American theory of the just (defensive) war as it applies to the new problems of the nuclear-missile age. The author offers no "solutions" to the moral dilemmas raised by the prospect of employing force in modern warfare.

L. BIBLIOGRAPHIES ON ARMS CONTROL AND RELATED PROBLEMS

100. BOGGS, MARION W. *Attempts to Define and Limit "Aggressive" Armament in Diplomacy and Strategy*. Columbia, Mo.: University of Missouri Press, 1941. Bibliography: pp. 105-13.

A list of the documents, books, and articles abstracted in this study on "aggressive" armament in diplomacy and strategy.

101. BRODY, RICHARD A. *Deterrence Strategies: An Annotated Bibliography*. Evanston, Ill.: Northwestern University Press, 1960, 33 pages.

Annotated references to thirty-eight books and articles, published since 1954, on the strategy of deterrence, "selected because they represent a broad section of the literature or for the uniqueness of their approach."

102. BROWN, NOEL J. "The Moral Problem of Modern Warfare: a Bibliography," *Morality and Modern Warfare: The State of the*

Question, ed. William J. Nagle. Baltimore, Md.: Helicon Press, 1960, pp. 151-68.

A comprehensive bibliography of books, pamphlets, and periodical literature in the U.S. and Great Britain. It also includes selected literature from Continental Europe. Approximately 350 titles are listed.

103. THE CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE. *Traffic in Arms, Munitions, and Implements of War and Control of Their Manufacture*; Annotated, selected list of books, pamphlets, and articles. Washington, D.C., 1933, 22 pages.

104. COLLART, YVES. *Disarmament: A Study Guide and Bibliography on the Efforts of the United Nations*. (See entry No. 7.) Bibliography: pp. 91-110.

Unannotated references to bibliographies, official documents, and some of the most important publications on the United Nations and disarmament, in English, German, and French.

105. EMME, EUGENE M. *National Air Power and International Politics: A Select Bibliography*. Maxwell Air Force Base, Studies and Research Branch, Historical Division, Department of the Air Force Library, 1950, 191 pages.

Annotated list of books and articles dealing with air power in international affairs. Limited references to disarmament as such, but full section on international law and controls relating to aviation. Includes subject and author index.

106. FELD, BERNARD T., and others. *The Technical Problems of Arms Control*. (See entry No. 76.)

Unannotated bibliography: pp. 23-27. (In three parts: General, Technical Aspects, Political and Military Aspects.)

107. *Foreign Affairs Bibliography. A Selected and Annotated List of Books on International Relations*. A series of three volumes. New York: Published by Harper & Brothers for the Council on Foreign Relations.

LANGER, WILLIAM L., and ARMSTRONG, HAMILTON FISH. *Foreign Affairs Bibliography, 1919-1932*, Vol. I, 1933. 551 pages. First Part, Section VI lists references under War, Peace, Security, and Disarmament: pp. 67-86.

WOOLBERT, ROBERT G. *Foreign Affairs Bibliography, 1932-1942*, Vol. II, 1945. 705 pages. First Part, Section VIII, War, Peace, Security, and Disarmament: pp. 99-119.

ROBERTS, HENRY L. *Foreign Affairs Bibliography, 1942-1952*, Vol. III, 1955. 727 pages. First Part, Section VIII, War and Peace: pp. 100-112.

In addition to the specific categories above, disarmament references are scattered throughout other subject listings. Includes author index; no subject index.

108. HALPERIN, MORTON H. *Limited War: An Annotated Bibliography*. Cambridge, Mass.: Center for International Affairs, Harvard University, February, 1961, 48 pages.

This "comprehensive bibliography" contains 277 items, including a section on limited war and arms control. Also includes a four-page authors index.

109. HENKIN, LOUIS. *Arms Control and Inspection in American Law*. New York: Columbia University Press, pp. 270-77.
Unannotated bibliography on the legal aspects of arms control affecting the U.S.
110. HOGAN, JOHN C. *A Guide to the Study of Space Law, Including a Selective Bibliography on the Legal and Political Aspects of Space*. (P-1290.) Santa Monica, Calif.: The RAND Corporation, 1958, 55 pages.
Unannotated bibliography of more than 250 selections from books; law reviews; political, scientific, and technical journals. Sources cited are in English and eight foreign languages.
111. LEAGUE OF NATIONS. *Annotated Bibliography on Disarmament and Military Questions*. Geneva, 1931, 153 pages.
Selected and annotated information on principal publications concerning disarmament efforts within and outside the League; also covers naval disarmament, stages toward security, and economic aspects of security.
112. LEONARD, L. LARRY (ed.). *Current Thought on Peace and War*. Vol. I, No. 1 (Winter, 1960); Nos. 2 and 3 (published jointly, Summer and Fall, 1960).
An annotated and cross-indexed "Quarterly Digest of Literature and Research in Progress on the Problems of World Order and Conflict," including a number of references on aspects of arms control.
113. LIBRARY OF CONGRESS. DIVISION OF BIBLIOGRAPHY. *Disarmament, with Special Reference to Naval Limitation: A List of Recent References*. Compiled by Florence S. Hellman. Washington, D.C.: Government Printing Office, 1934, 42 pages.
Unannotated list of books, articles, and speeches; includes an author index.
114. ———. *The League of Nations and Disarmament: A Bibliographic List*. Washington, D.C.: Government Printing Office, 1929.
Unannotated list of official publications of the League and of books and articles relating to the disarmament activities of the League.
115. LIBRARY OF CONGRESS. LEGISLATIVE REFERENCE SERVICE. *Controlling the Further Development of Nuclear Weapons: A Collection of Excerpts and a Bibliography*. (Prepared at the request of the Subcommittee on Disarmament, Senate Committee on Foreign Relations.) Washington, D.C.: Government Printing Office, 1958. Part IV, "Select Bibliography," pp. 51-54.
Unannotated bibliography of accessible references on political and strategic implications of the control and further development of nuclear weapons; control and inspection; and biological aspects.
116. TATE, MERZE. *The United States and Armaments*. Cambridge, Mass.: Harvard University Press, 1948. Bibliography, pp. 275-86.
Selective bibliography, unannotated, of general references on disarmament and of books and articles on the limitation of armaments on the Great Lakes, the Hague Conferences, the League of Nations

and the limitation of armaments, the limitation of naval armaments, the economic and industrial disarmament of Germany and Japan, and the control of atomic energy.

117. UNITED NATIONS, ATOMIC ENERGY SECTION. DEPARTMENT OF POLITICAL AND SECURITY COUNCIL AFFAIRS. *An International Bibliography on Atomic Energy. (Political, Economic, and Social Aspects, Vol. I.)* United Nations, N.Y.: 1953, 31 pages.

A briefly annotated bibliography of references on international and national control; peaceful and military uses of atomic energy; and social, economic, political, and ethical implications of atomic energy.

118. U.S. SENATE, COMMITTEE ON FOREIGN RELATIONS. *Disarmament and Security: A Collection of Documents, 1919-1955.* (See entry No. 28.) Appendix II, "Selected References," pp. 1002-26.

Unannotated list of titles selected to supplement the collection of documents on disarmament and security. Includes bibliographies, books, articles, and official documents; specific references to weapons of mass destruction, conventional armaments, regional and economic aspects of disarmament.

119. U.S. ARMY. *Bibliography on Limited War.* ("Department of the Army Pamphlet," PAM 20-60.) Washington, D.C.: Headquarters, Department of the Army, 1958, 53 pages.

Fully annotated references on limited war and related questions.

120. *Disarmament: A Bibliographic Record, 1916-1960.* Prepared by Harry Moskowitz and Jack Roberts of the Staff of the Army Library for the Office, Special Assistant to the Joint Chiefs of Staff for Disarmament Affairs. Washington, D.C.: Government Printing Office, 1960, 66 pages plus appendixes.

Comprehensive listing and annotation of the significant unclassified references on the various aspects of disarmament and arms control. Soviet disarmament bibliography appended.

121. U.S. DEPARTMENT OF STATE. *Documents on Disarmament, 1945-1959.* Washington, D.C.: Government Printing Office, 1960. (See entry No. 25.)

Bibliography (Vol. II, pp. 1600-1604) contains unannotated list of U.S. Government and U.N. publications on disarmament and related subjects.

122. U.S. DEPARTMENT OF STATE. *Social Science Research on Outer Space.* External Research Report ER-27. Prepared by the External Research Division, Bureau of Intelligence and Research, Department of State, 1959, 25 pages.

Unannotated, selective listing of references, both completed and in progress, on the various social-science aspects of outer space; includes selections on control of outer space and international cooperation in the peaceful exploration of outer space.

123. WRIGHT, CHRISTOPHER. "Selected Critical Bibliography," special arms-control issue of *Daedalus*, Fall, 1960. Columbus, Ohio: Wesleyan University Press, 1960, pp. 1055-73.

Concise annotations of major works, official and unofficial, on the broad aspects of arms control.

Notes on Contributors

HANSON BALDWIN. Military Editor, *The New York Times*; Pulitzer Prize, 1942; author of *The Great Arms Race*, *Great Mistakes of the War*, and *The Price of Power*.

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States, Saving American Capitalism, Economics of Planning, and Keynes: Economist and Policy Maker.

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author of *Principia Mathematica*, *A History of Western Philosophy*, *Wisdom of the West*, *Human Knowledge, Its Scope and Limits*, and *Authority and the Individual*.

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EDWARD TELLER. Professor of Physics-at-Large, University of California; Director of Lawrence Radiation Laboratory, University of California, at Livermore (1958–60); member, General Advisory Committee of the Atomic Energy Commission and Science Advisory Board of the Air Force; author of *The Structure of Matter*; co-author of *Our Nuclear Future: Facts, Dangers and Opportunities*.

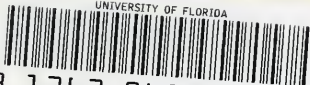
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ALBERT J. WOHLSTETTER. Member, Research Council, The RAND Corporation; scientific advisor to the U.S. delegation at 1958 Surprise Attack Conference with Russia; author of "The Delicate Balance of Terror," *Foreign Affairs*.

ARNOLD WOLFERS. Director and Research Associate, Washington Center of Foreign Policy Research; Sterling Professor Emeritus of International Relations, Yale University; author of *Britain and France Between Two Wars*; co-author of *The Anglo-American Tradition in Foreign Affairs*; editor of *Alliance Policy in the Cold War*.

~~3-DAY RESERVE~~ **OVERNIGHT RESERVE** **DESK**
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